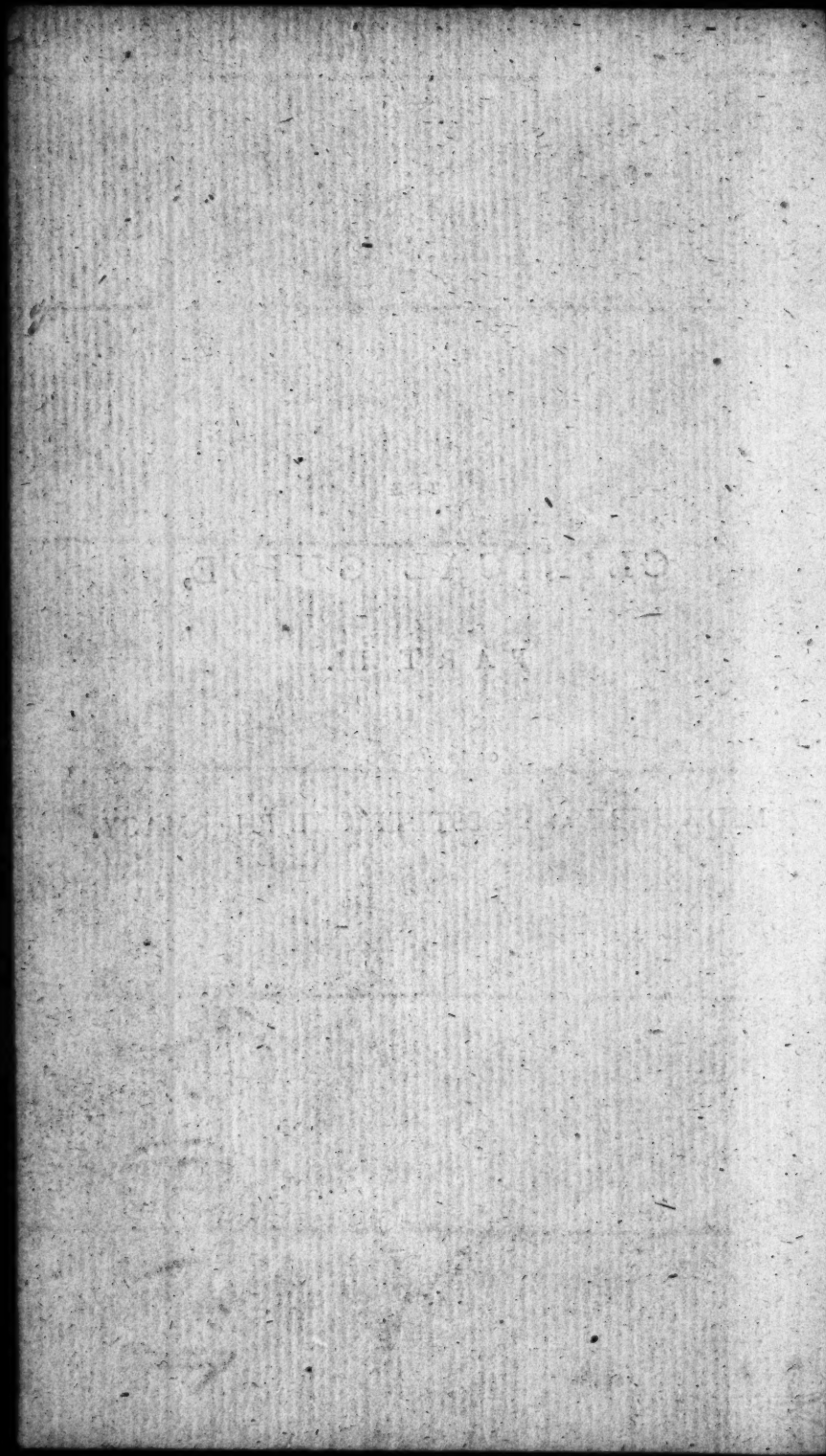


THE
CLINICAL GUIDE,

PART III.

CONTAINING

MIDWIFERY AND OBSTETRICAL PHARMACY.



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THE
CLINICAL GUIDE,
OR
A Concise View
OF THE LEADING FACTS,
ON THE
HISTORY, NATURE, AND TREATMENT
OF
THE VARIOUS DISEASES
THAT FORM
THE SUBJECT OF MIDWIFERY,
OR ATTEND THE
PREGNANT, PARTURIENT, AND PUERPERAL STATES:
INTENDED AS
A Memorandum-Book for Practitioners.
To which is added
AN OBSTETRICAL PHARMACOPCEIA,
Divided into Three Parts;
Viz.—MATERIA MEDICA,
CLASSIFICATION, & EXTEMPORANEOUS PRESCRIPTION.

BY
WILLIAM NISBET, M.D.
FELLOW OF THE ROYAL COLLEGE OF SURGEONS OF EDINBURGH, AND ONE OF
THE SURGEONS TO THE ROYAL INFIRMARY, NOW OF LONDON.

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AND J. WATSON, EDINBURGH.
1800.

CLINICAL GUIDE



THE SUBJECT OF

AN OBSTETRICAL

AND ALLIED

AND ALLIED

TO
SIR WALTER FARQUHAR,
BART. F.R.S.

WHOM
PUBLIC APPROBATION
HAS JUSTLY RAISED TO THE FIRST RANK
IN MEDICINE,

THIS WORK IS INSCRIBED,

AS
A TRIBUTE OF RESPECT,

BY THE AUTHOR.

TO

SIR WALTER FARQUHAR
BART. &c.

OF

THE UNIVERSITY OF

EDINBURGH

IN MEDICINE

THIS WORK IS INSCRIBED

AS

A TESTAMENT

BY THE AUTHOR

PREFACE.

IN every science, the principles of which are extensive, for the success of their application to practice, certain divisions have been found necessary;—these, by confining in some measure their limits, render an acquaintance with the whole less requisite, and make the several parts, at the same time, in some degree, independent of each other. Hence has arisen a variety of departments in the same profession. In none is this more displayed, or with greater advantage, than in Medicine. From a superficial consideration of the nature of disease, and particularly of the difference of the means necessary to its cure, a division of this science originally took place into two departments, of **Physic and Surgery**. This division, however, was too extensive. New discoveries daily increased the number of subjects comprehended under each, and a still farther division was

found necessary to be made. Thus, on the institution of universities, at a very early period, we find a variety of departments established in Physic: Surgery continued for long in its original state; but the progress of civilised life, with its attendant evils, rendered also a change at last necessary here. Those situations, which were formerly considered as merely natural, and the effect of unavoidable constitutional causes, came more frequently to require medical aid: a division therefore of Surgery took place, comprehending that part of it concerned in the delivery of pregnant women. From this period it has received a greater share of attention than formerly, and a zeal for its improvement which has arisen, increased the number of subjects originally comprehended under the title of Midwifery. Its relation, however, to Surgery still in some measure prevails, and the reputation of the accoucheur is generally estimated in proportion to the dexterity he displays where difficulties occur in conducting the operation of delivery. From the other branches of Surgery it chiefly differs in this, that while the surgeon has the advantage of the eye to direct the use of his instruments, the accoucheur must trust entirely to the feel as the guide of his conduct, in judging both of the morbid state, and of the means of relief.

The present work is the substance of a Course of Lectures, delivered by the author in Edinburgh some

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years ago on this subject. He has now attempted to condense them into the form of a system, a plan seldom hitherto aimed at by the numerous authors on Midwifery; and he has also dwelt on some subjects, of importance to an accoucheur, which have been rather slightly treated in other works.

To render it more useful, and shew the relation between Midwifery and the other parts of the science, he has connected it with the two former volumes, published under the title of "The Clinical Guide," comprehending Medicine and Surgery. The only difference in the plan of the present volume from the former ones is, the introduction of theory, which he found necessary to connect the different subjects of Midwifery, and to shew their dependence on each other. This, however, wherever it occurs, may be passed over, if disagreeable, and the facts, in regard to the nature and treatment of the different subjects, only attended to.

These three volumes now published include all the practical subjects of the profession, except the Diseases of Infancy and early Childhood. This part the author intends as the subject of an additional volume, tracing the progress of infancy from the first dawn of existence to the age of puberty. The diseases of infancy are perhaps less understood than any other part in medicine, and they occur equally to the phy-

PREFACE.

fician, the surgeon, and the accoucheur, in the course of practice. They are not, therefore, properly to be considered as an appendage to Midwifery, or as belonging exclusively to the practice of the accoucheur.

The present volume it is hoped will be received with equal indulgence as the two former. Many parts of obstetrical practice will be found placed in a new point of view.

The Prognostics of Midwifery will prove useful to every accoucheur commencing practice. They form a part which has hitherto been little treated in books of this kind.

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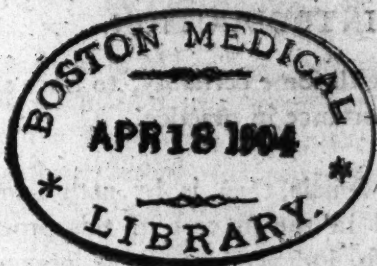
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INTRODUCTION.

I. **M**IDWIFERY teaches the management of those disorders that attend women, from the moment of conception to their recovery after delivery.

II. The disorders of women during this period are properly divided into three distinct classes, as peculiar to the pregnant, parturient and puerperal states, which being all the effect of one common cause, or conception, this process merits a previous and principal inquiry.

III. Conception is one of those peculiar processes it is impossible to explain. In all the more perfect animals, a union of the sexes seems absolutely necessary to its completion. In whatever manner also it takes place, the perfection of its operation *ultimately* depends on the female. Hence, though we cannot explain its nature, as eluding our research, yet these circumstances in the female, necessary to render it successful,

we are enabled, with some certainty, to trace a point of considerable importance in practice.

IV. Since the female, then, is by nature more intimately concerned in the success of this process than the other sex; so, independent of the organs in her fitted to perform it, we should expect, on comparison, to find a certain difference in the general habit of the sex prevail; and this difference, or *Constitutional Distinction*, we therefore assume, as forming those circumstances necessary to the success of conception, and on which, *perhaps*, it essentially depends.

CONSTITUTIONAL DISTINCTIONS OF THE FEMALE HABIT.

1. *General.*

V. Such a difference, or *constitutional distinction* betwixt the sexes, has been long marked by authors, though not sufficiently insisted on in the present view. It consists in a certain lax state of the simple solid, with an increased irritability of the nervous system.

The former of these has a particular effect on the state of the pulse, and the different secretions. Thus the pulse of women is always quicker and weaker than that of men; often to such a degree, as to equal that which denotes the presence of real disease. Hence, in all the diseases of women, we can judge with less cer-

tainty by it than in the other sex. Thus also, from the weaker circulation, the secretions, which depend greatly on the force with which the fluids are propelled into the secretory organs, are more sparing, and the excretions diminished in the same proportion; so that a fullness, or plethoric state, of the sanguiferous system is necessarily produced. This plethora has been remarked by physicians as at all times attending the constitution of the sex; and the tendency to it is also particularly favoured by their sedentary life, and greater confinement than the male. From the same source of laxity in the solids, the action too of the lymphatic system is much weaker than in the other sex. Hence they are more liable to those diseases which depend on diminished exhalation, particularly dropfy; and this disease is more apt to occur in them, from simple debility, without any local affection, than in the other sex. A more favourable prognosis, therefore, may be here generally formed.

VI. The increased irritability, again, of women is best displayed by the particular disposition or temper of mind characterising the sex, as well as the diseases to which they are subjected.

“ Thus (as Dr. CULLEN remarks) they are readily elated by hope, and as readily deprest by fear; passing easily and quickly from one extreme to the other; easily pleased, and prone to gaiety; and as easily provoked to anger, and rendered peevish; liable from slight impressions to strong emotions, and tenacious of none.” Hence the proverbial description of this constitution, as

the *Varium et mutabile femina quæ colligit ac ponit iram temere, et mutatur in horas.*

VII. That this state of constitution described (V.) is necessary to conception, we infer from several observations.

1. It is agreed by all authors, that those women who are of the most relaxed and weakly habit are, by experience, found to be the *greatest* breeders.

2. Where, from their situation in life, by reason of labour or other hard exercise, women become robust, and approach the masculine character, they either have no children at all, or cease to have them soon.

3. Where women are late of marrying, so that a rigidity of fibre has begun to take place, and the constitutional distinction to depart, they are seldom mothers, or their children are few.

4. Where from debauchery, as in case of common prostitutes, the natural irritability is lessened, and the feelings rendered callous, barrenness generally ensues.

5. Fat women, in whom also the senses are generally more torpid, have few, sometimes no offspring. In proof of this, we have only to remark the state of population in Holland, where this obesity in the female proceeds to a morbid degree.

VIII. From these observations, detailed (VII.), since conception, we are led to presume, as connected much with the presence of this general difference of constitution betwixt the sexes (V, VI.); so we should next expect to find its preservation studiously provided for by nature, during the greater part of life, or, at least, the

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whole of that period of life, during which conception takes place; and that this is the case, is confirmed, when we examine next the *local peculiarities* of the female, the chief of which is *Menstruation*.

2. Local.

IX. This consists in a periodical evacuation of blood, from the uterus or seat of conception, the approach of which is marked for some time longer or shorter, according to the state of the uterus, by a whitish serous discharge, which departing, assumes at last the proper red appearance.

The period when this arrives constitutes the proper acmé of the female system, and forms the age of puberty of the sex. In this climate, it commences at fourteen or fifteen; but in the warmer climates, where the body sooner arrives at perfection, it displays itself at a period considerably earlier, as ten or twelve.

The duration of the discharge at each period is much diversified with different individuals, and extends from two or three days, to seven or eight.

Its quantity also, and manner of flowing, are equally various. In some it seldom exceeds two or three ounces, and in others, though more rarely, it will amount to no less than a pound. In some it flows slowly, and imperceptibly, during the whole period. In others it is more rapid at once, and then intermits. Those of the sanguine temperament have been remarked as most liable to profusion; those of the phlegmatic as least so.

Its quantity, however, varies in the same subject at different periods of its recurrence, and no certain rules can be drawn with respect to it.

The frequency of its recurrence is equally various in different individuals, as the other circumstances attending it. At a medium, a lunar month has been mentioned as a proper distance between its repetitions; though the health of the female alone determines our opinion with respect to it.

X. From the acmé of the system, then, whatever this be, this discharge continues without interruption, except during gestation, and the period of nursing, till what may be termed the turn or decline of life, of which it may be considered, by its total disappearance at whatever time this takes place, as the leading mark. In this climate it commonly occurs some time betwixt the fortieth and fiftieth year; previous to which, as that state of the uterine system is beginning to be established, which terminates its appearance, it becomes more or less irregular; a period when the health of the female is considerably affected, and to which much attention is generally paid.

XI. Every woman, then, whose uterine system is complete, has this discharge for the greater part of life; and the more regular it is, the general health of the sex is the more complete. Many authors have remarked, that the menses, after the decline of life, have experienced a return, and that menstruation has continued regular to a very advanced age. These singularities, however, are to be considered as the effect of a dis-

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eased state of the uterus, which is sufficiently confirmed by this circumstance, that such patients were generally cut off by the hemorrhage at last.

XII. A lunar month was remarked (IX.) as the proper distance between the periods of the repetition of each discharge; but in this a very great variety prevails, both in the same climate, and also in different climates. Thus, in the same climate, some women menstruate with the greatest regularity every fortnight or three weeks, while others again have regularly no appearance of the discharge for an interval of two or three months. These peculiarities, however, of habit, require to be accurately distinguished from disease, and it is the effect alone of its retention on the system we judge by.

In the warmer climates, again, menstruation is common every fourteen days, or, at most, three weeks; nay, it is seldom absent, though then it rises in some measure to the height of disease.

In the very cold climates the reverse takes place. In Lapland, it has been mentioned as only recurring twice, or at most thrice, in the course of the year.

XIII. The symptoms of the menses are very fully described by authors, and admit a division into those that occur *previous* to their proper establishment, and those that mark them *after* their regular recurrence has taken place.

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The former consist of general symptoms of turgescence of the vascular system.

The latter of irritation of particular organs, with which the uterus sympathises from its distended state.

XIV. The first we find manifested by,

1. General increase of circulation; the pulse being fuller and quicker than what is usual, previous to this period.

2. Particular symptoms of oppression, and weight at the precordia.

3. General languor and inactivity, with swelling and turgescence of the breasts.

4. Accidental rupture of vessels, or hemorrhages from different parts, giving a temporary relief to this state.

XV. The second set of symptoms, again, or the sympathetic, consist of uneasiness at stomach, pain of head, back, &c.

When the menses are once fully established, the constitutional symptoms of turgescence (XIV.) more rarely appear, or only in a slight degree, and each successive return is rather distinguished by the uterine symptoms themselves, as pain, tension, and lassitude of the hypogastric region, with slight disturbance in the functions of some of the sympathising parts, particularly the stomach and head.

XVI. From this short examination of the history and symptoms of the menstrual discharge (from VIII. to XV.), it is proper we should next attempt to deduce some view of its cause.

INTRODUCTION.

In order to explain this, it is necessary we should recur to our former position, that the *leading characteristic of the female habit* is a laxity of solid; and that this laxity requires to be *studiously preserved* by nature, through the greater part of life, as essential to the execution of that separate office which the sex is particularly destined to perform; that this is the effect of the menstrual discharge, in a principal manner, will appear when we consider the circumstances which mark the age of puberty in the male.

XVII. The growth of the body is observed to depend on the extension of the vascular system with a corresponding apposition of new matter. The manner of this extension is determined by certain laws, which occasion particular parts to acquire first their complete size, before others are enlarged in the same degree; but the progress of extension, or the growth of any part, is always in proportion to the laxity of solid, or superior force of the heart, compared with that of the vascular system. Hence we find in infancy, while the solid is lax and yielding, the extension is most rapid; and gradually, in the progress to puberty, the facility of extension diminishes, till at last a balance, between the force of the heart and resistance of the vascular system, opposing the further elongation of the latter, is induced.

As the powers of nutrition remain equally strong, the effect of this resistance to growth must soon be an excess of fluids or plethoric state, affecting the general circulation; which state is removed, partly by the evolution of glands, whose functions were formerly

incomplete, forming a new secretion, and partly by an increase of the different excretions in consequence of an increased rigidity of solid, the effect of the more powerful exertions of the heart, to accomplish a further extension of the vascular system.

But in the female no secretion is intended to take place, while, at the same time, the rigidity of solid induced by the increased action of the heart at this period is unfavourable to the *continuance* of that habit remarked to characterise the sex. Hence, to prevent it, as from the circumstances of growth, a plethoric state must necessarily ensue; and in order to distinguish the sex, of which, before this period, there is *little* distinction, a discharge we find take place from the general circulation itself, which is profuse in proportion to its frequency, and which at once affects the action of the heart, and consequently the state of the vascular system, as not being altered by any secretion.

XVII. From this circumstance, the age of puberty, which gives to the male an increase of vigour and tension of solid, communicates, on the contrary, to the female a sensible weakness and laxity not felt before, producing, in the whole system, that state which in future is to distinguish the sex.

XVIII. The situation from which we mentioned this discharge to appear was the uterus; and we find its appearance here originally favoured,

1. By the circulation to the organ; and,
2. By the structure of the organ itself.

XIX. With respect to the former, it is observed,

1. That the descending aorta is larger in women than the ascending; the reverse of which is conspicuous in the male, and shows that an increased determination is here intended.

2. It lays aside, in some measure, its natural firmness and density, before it divides, so as to be more affected by the action of the heart in this situation.

3. The veins are small in the inverse proportion to the arteries, and possess an increased density, retarding the flow into them from the arteries, thus favouring accumulation in the organ, where a plethoric state of the general system prevails.

XIX. With regard to the structure of the organ, it consists entirely of a *parenchymatous* substance, which readily admits distension, and may be considered as somewhat between muscular and cellular matter, receiving, by extension, the nature of the former. The distension of such matter is not attended with those consequences which distinguish it in the other organs: for where distension of them occurs, inflammation is liable to ensue. In the uterus, however, this never happens; even in the liver, which is of a similar structure, inflammation is not very frequent, compared with the other organs, and difficult to detect, in consequence of its little sensibility, whatever authors may assert.

Hence, these two circumstances of its structure, and little sensibility, favour that accumulation which the state of its circulation naturally induces.

XX. Having thus explained the causes that pre dispose

to its occurrence, and the necessity for the discharge, it remains next to account for the real appearance of the discharge itself.

From the distension of the uterus, mentioned (XVI.), we suppose that the ovaria, as being *highly* irritable, and sympathising in a peculiar manner with the uterus, are excited in a certain degree by its distended state; which excitement communicating to the spermatics, and the other vascular branches distributed in a particular manner upon their substance, an increased stimulus augments their action to that degree, that a rupture of their extremities occurs where connected with the veins, and where the resistance to their circulation is greatest, taking off the *general* as well as *partial* plethora of the system.

XXI. That this irritable state of the ovaria much influences the appearance of the menses we have reason to conclude;

1. Because the ovaria at this period show a different appearance from what is conspicuous before, and a fullness of their contents.

2. Because the spermatic arteries, have a particular distribution on the ovaria, which can answer no other purpose than to increase any irritation conveyed to these parts.

3. From the ovaria being observed to be of a very small size in cases of chlorosis.

4. From these parts suffering more than any others of the genital system, on the decline of life, when the menses begin to depart, losing their usual size, and becoming considerably shrivelled.

5. From menstruation becoming irregular where they happen to be diseased ; and,

6. From analogy in the male, in whom a certain state of the genital system is necessary to give tension and tone to the whole body, and hence, from the similarity subsisting between the testes and ovaria in their functions, where the menses do not appear, as a general flaccidity prevails in the female ; so we conceive such a state in the ovaria necessary to the appearance of the menses, as on the usual commencement of this discharge no such flaccidity is ever discovered.

XXII. The menstrual blood we consider as flowing from the arterial system ; for during youth and middle age, when the menses only flow, the density of the venous coats exceeds that of the arteries ; consequently a greater resistance is formed to the transmission of the blood into the former. Hence, the accumulation at this period must chiefly prevail in the latter ; and from their contractile power, increasing their natural resistance, a rupture of the arterial extremities, where connecting with the veins, will of course occur. This is also proved by its greater consistency with the usual laws of the circulation, and from the nature of the blood itself, which discovers the same florid appearance as when flowing from the arteries.

XXIII. In this manner we account for the first appearance of the menstrual discharge. But though necessary for its *first* appearance, and till once properly established, this general state of the system is no longer required for its subsequent returns. For as we have observed the vessels to be here more favourable

for accumulation than in any other part, so the distension of them in the same degree with those of the rest in the body, to produce only a balance of them with the other parts of the system, by giving a certain irritation to the ovaria, which we consider in their natural state as highly sensible, and the latter exciting in their turn, their contraction easily produces from their ruptured extremities the same evacuation as *formerly* took place; although, at the same time, this degree of irritation on the ovaria is much inferior to what the general plethoric state, formerly mentioned, induced.

XXIV. That this is the cause, and that, when *once* established, the succeeding returns of this discharge are *not* influenced by the general plethoric state, which at first occurred, we possess the clearest evidence.

1. By its not stopping in circumstances of the most debilitated situation, where a general plethora can have no existence; and hence it cannot, as many authors allege, depend on the quantity and quality of the nourishment taken in; nor yet on the degree of insensible perspiration, as being most abundant in a warm climate, where such insensible perspiration is greatest.

2. By its not being suppressed by remedies removing general plethora, particularly blood-letting.

3. By its being promoted by stimuli applied to the uterus, exciting the state of the ovaria, as frequent coition.

4. By its occurrence in greatest quantity in those who are most relaxed; the sensibility of the ovaria being in them greatest; and the less distension, there-

fore, producing the irritation necessary to the discharge.

XXV. Having endeavoured, then, to deduce some opinion of the nature and causes of the menstrual discharge, it is proper we should review the most remarkable theories which have been delivered at different periods, with a view to explain the subject. The *first theory* is, that which referred its appearance to the influence of the moon. The regularity of its appearance in the same subject, and the distance of its periods in the greater number of women, particularly in that climate where this theory was first delivered, strongly favoured such an opinion, which, in modern times, has been very ably supported by Dr. MEAD. But, in spite of what he has offered in its favour, it appears from the history of menstruation delivered, that women suffer this evacuation at all different times, without any particular regard to the state of the moon; and that the periods of repetition, in different women, by no means observe such a regularity as must necessarily take place, did they proceed from this cause.

XXVI. The *second theory* is that which referred its origin to a particular action of the fluids of the uterus, under the idea of fermentation, by which they came to be partly ruptured, and to pour forth their contents at stated periods. This was a term applied to explain almost every change in the animal body, while the chemical theory of medicine prevailed: but from its effects in chemistry we observe, that fermentation is a process which, if occurring in the human

body, would be always attended with morbid consequences, and extend its influence constantly through the system, even all the time it was forming, as well as during the period of the flow; that it is a symptom of health, not of disease; and such a term, therefore, cannot apply to both states, as took place in the chemical theory.

2. The regularity of its occurrence in the same subject opposes this idea: and,

3. The vital principle in the animal body counteracts all processes of inanimate matter, and subjects the system to peculiar laws; so that such a process could only take place after it was poured into the uterus.

XXVII. *Another*, and a more ingenious opinion, of the origin of the menses, is that which referred it to a *peculiar secretion* in the uterus, which, giving an increased activity to its vessels, produced the discharge. In this they were confirmed by what happens in animals, which, at particular times, when desirous of venery, show a state of the uterus similar to what occurs under menstruation.

But, in the first place, we would observe, that there is no proof of any such secretion taking place, neither does the argument from analogy hold here; for women we find not more desirous of venery at the period of menstruation than at any other time; on the contrary, the embraces of the husband are more carefully avoided; consequently, no state similar to that in the brute creation can exist.

XXVIII. The fourth, and most universal theory, however, is that which viewed this peculiarity of the female habit as arising from a general plethora.

It has been supported by many writers of the first reputation; and, on this account, we shall beg leave to consider it with some attention.

The first argument advanced in support of this opinion is—

1. That the more relaxed constitution of women, by communicating less power or force to the circulation, occasions the different secretions to be less actively performed.

2. That their sedentary life possesses the same effect, and even increases that natural state of habit.

3. That the robust, and such as approach nearer in their constitution to the male, are irregular in their menstruation.

4. The power of nutrition remaining equally strong, while the rapidity of growth at the age of puberty diminishes, a tendency to general plethora must necessarily be produced: and,

5. That such plethora actually takes place, is confirmed by a spontaneous hemorrhage, at the age of puberty, without any flow from the uterus itself, relieving for a time the morbid symptoms which then appear.

XXIX. That such a general plethora is then conspicuous, we have already endeavoured to support; but it is equally true, for the reasons also formerly assigned, that, when once established, it cannot influence at all times its subsequent returns. This soon appeared to many authors; and deserting, therefore, the

theory of a general plethora, which, we still contend, at first prevails, they endeavoured to account for it by the same state confined solely to the uterus itself. This they attempted to support in two ways; either,

1. By a particular structure of the vessels of the organ; or,
2. Certain circumstances of its circulation, without this.

The first was the favourite theory of Dr. ASTRUC, who has taken very great pains in describing this peculiarity of structure; but his descriptions have never been confirmed by the dissections of any future anatomists, and are to be considered as merely ideal, and formed to explain a difficulty he could not otherwise overcome.

The second again, or the circumstances affecting the circulation of this organ in a peculiar manner, are:

1. The tendency to accumulation, which the vessels in the neighbourhood of the uterus, from their structure formerly described, possess.
2. The want of valves, which the uterine veins discover, and the slow motion by which their fluids must, therefore, be particularly distinguished.
3. The situation of the organ itself, or its dependent state; and,
4. Its analogy with the other part of the body, particularly the breasts, where a *local plethora* at times evidently appears. For these reasons, then, a local plethora must be admitted as taking place: but, from analogy with those hemorrhages, which occur in other parts of the body, some added causes are necessary to produce at first the discharge; besides, the simple accumulation in the organ

itself, and a general plethora, at least a degree of increased action of the system, must be likewise introduced, to account for many of the phenomena which characterise the first periods of its appearance.

XXX. The nature of the menstrual blood was formerly supposed different from the rest of the general mass, and as conveying also something morbid from the system. This arose from the theory of morbid matter; and was farther confirmed by the apparent symptoms attending its retention. It was on this account the discharge was formerly named by authors, the *menstrual purgation*, a term even used so lately as by Dr. HALLER. This opinion has been somewhat revived, though on a different principle, by the late Dr. HUNTER, under the idea of its being a bloody secretion, not common blood. The motion of the blood, indeed, in the vessels of the uterus, from their minuteness in their natural state, must be very slow: hence their contents will possess, on evacuation, a great quantity of coagulable lymph, which is confirmed by the menses being frequently voided by many women, in the form of clots. The blood also, when poured from the uterine vessels, is certainly in an extravasated state, and is then exposed to the different changes which heat and retention may produce. This they were very early sensible of in the warmer climates; hence the severe injunctions, and those other restrictions recommended so strongly by the Levitical law: such regulations still prevail in most of the warmer countries;—experience must have early pointed out the necessity for them. It is likewise the more proper, as diseases of the menses, or a morbid state of

the discharge, is more liable to occur in those situations, and particularly the fluor albus, from which a gonorrhœa spuria often arises.

XXXI. The menstrual blood we formerly remarked as flowing from the uterus, and generally its fundus. This, however, is not always the case; and dissections have shown some variety to occur in particular instances. This variety it is proper also to be acquainted with; for where the vessels of the uterus possess any unusual firmness of texture, as the circulation of all these parts has a connection by the anastomosis of their vessels, the rupture of the latter may occur in the vagina, and the discharge flow from this source; a circumstance which has been at times remarked: but that it flows most commonly from the uterus, is confirmed by observation in cases of prolapsus, as well as by dissections; and that it proceeds also from its fundus we have a farther proof by this part in gestation, forming, generally, the place of attachment of the placenta.

XXXII. In the quantity of the discharge at each period, a great variety was formerly observed to prevail; and the only way of ascertaining the exact quantity voided at a time is by examining the cloths applied to receive it. When, however, it flows at first in a considerable stream, as the blood possesses then a less proportion of coagulable lymph, it will stain a greater number of cloths than where it flows slowly and imperceptibly, and acquires an additional firmness by the dissipation of its thinner parts from retention. Hence we cannot absolutely decide on this proof of its quantity, commonly advanced by authors.

XXXIII. The natural interruption, also, of this discharge we mentioned as only taking place during gestation, and the period of nursing. In some instances, however, as we shall afterwards find, it appears for two or three periods after conception; but this is so rare, that it no way controverts the general opinion, and is to be considered in such instances as a deviation entirely from the natural course. It perhaps only occurs in those in whom the discharge is usually from the vessels of the vagina, which are not so soon affected by conception. In the same way menstruation has been known to continue regular during the whole period of nursing; but such cases deserve to be marked merely as uncommon occurrences, and as showing the variety of nature in the formation of the constitution. It is generally, however, ten or twelve months after child-bed before the menses return; and where nursing does not take place, it is at least six weeks, or three months.

Nay, it has been known, though this is still more rare, that some women have never at any time during their life suffered menstruation. In these, however, the uterus on dissection has been found wanting.

XXXIV. Women themselves consider the period of menstruation, in some measure, as a state of disease; and hence they are minutely attentive to every circumstance regarding their health at this time. Their natural irritability is certainly then increased, and their opinion may have an effect in rendering it more so. It is necessary to humour those prejudices. You cannot indeed, with propriety, combat what is early instilled both by the mother and every female attendant,

These prejudices have occasioned certain aliments being particularly rejected at this time, as fish and milk, which are the most noted. Some delicate stomachs, indeed, cannot bear the use of these substances at any time; and, from their particularly disagreeing during menstruation, they have been considered by the sex in general as improper at this period.

The proper rule, however, in this case is, that whatever disagrees at any other time should be then carefully avoided; and where fish and milk do not disagree, there is properly no necessity for their exclusion.

XXXV. We have thus offered our opinion of the menses; and in conclusion we observe, that, independent of the local effects of the discharge, it is necessary to preserve the *characteristics* of the female; and that its flowing prevents the occurrence of that state of constitution which distinguishes the male.

XXXVI. That this state of the uterus it induces, as well as that of the general constitution, is necessary to conception, is proved from the following circumstances:

1. Previous to the age of puberty, and when the menses have entirely ceased, conception is never found to take place.
2. Sparing menstruation is always attended with difficult conception: and,
3. Something similar to the menses, consisting in a serous excretion, or the appearance of a few drops of blood, occurs in all animals, when desirous of coition; and it is observed, in many animals, that when they come

to be in season, particularly Does, the uterus becomes soft, lax, and fleshy.

These, then, are the several circumstances (from V. to XXX.) that we judge essential to the success of conception, and from a previous knowledge of which, the nature of this phenomenon, with its effects on the uterus, we are now prepared to inquire into.

XXXVII. From the venereal appetite, or desire of coition, natural to every animal, we suppose, that, similar to the distension of the *corpora spongiosa urethræ* in the male, a *certain turgescence* of the female parts, and particularly of the uterus, previous to this act, occurs. By this turgescence, a peculiar state of excitement, favouring absorption, is induced; and the Fallopian tubes, in consequence of this state, appear to have their ragged fimbriæ, or absorbing extremities, erected; and on the admission of the male semen into the uterus by coition, a portion of it entering their cavity is carried through its whole extent to the fimbriæ; and by this increased stimulus of the fluid, these fimbriæ come next to be applied round the ovaria, which they are naturally meant, by their action, to embrace. In this situation, what they contain is shed on these bodies, which are considered to be of a peculiar glandular structure, possessing a number of small vesicles, or ova, in their substance. One or more of these ova, receiving, by this application of the fimbriæ, a particular change, burst the teguments which inclose them, and are then carried by the fimbriæ, through the Fallopian tubes, into the uterus. This retrograde motion is particularly favoured by that debility or collapse which

succeeds the excitement in coition; for, according to the experiments of Mr. DARWIN, the retrograde motion of vessels is chiefly owing to debility.

XXXVIII. To render this theory the most probable on the subject of generation, the following circumstances advanced require to be established as matters of fact.

1. The excited state of the female organs previous to coition.
2. The presence of the seminal fluid in the uterus and Fallopian tubes.
3. The action of the tubes themselves.
4. The existence of the ova in the ovaria.
5. The descent of the ova into the uterus.

XXXIX. With respect to the first, such a state is observable in all animals; and in some, as in the cat, it rises to the height of actual inflammation. In others, the distillation of a white fluid from the vagina, in considerable quantity, marking the same state of the parts, is very conspicuous.

XL. In regard to the second circumstance, or the presence of the seminal fluid in the uterus, the facts which support it are numerous; for,

1. Both RUYSCH and CHESelden found its cavity, soon after coition, not only filled with semen, but likewise the Fallopian tubes themselves;—a proof, at the same time, of their absorbent power.

2. The penis in coition is often sensibly felt to touch the orifice of the uterus; and, in some animals, it is of such a length, as to show it evidently intended for this purpose.

3. From the farther experiments of Spallanzani, it appears that the *aura feminalis* is not sufficient for animation; but that the semen itself must be applied to the ovum. Hence the common observation seems well founded, that, in a successful embrace, the semen is retained, while in the reverse it flows immediately from the vagina.

XLII. To confirm the third circumstance, or the absorbent action of the tubes, we observe,

That there are several instances of ascites being cured by the water being taken up from the abdomen in this way: and that this absorbent power is exerted for the descent of the ovum we farther establish,

1. By dissections which have shewn the fimbriæ of the tubes applied to the ovaria, after coition, and even coalesced there in other cases from a morbid state.

2. From obstruction of these tubes having been found a frequent cause of sterility.

3. From foetus having been found in the course of the tubes stopt in their descent into the uterus, by some cause, and increasing there;—and also from foetus being found in the abdomen itself.

XLIII. The fourth circumstance needs only the proof of dissection; for on cutting open the ovaria we find such ova manifestly exist in every female, though varying in their number.

XLIII. The last circumstance, and the most important, will be found equally clear from the following facts;

1. On cutting out the ovaria in animals, barrenness ensues.

2. The uterus in many animals is wanting; but in none that procreate are the ovaria wanting, or something of a similar nature answering the same purpose.

3. Foetus have been actually found in the ovaria in several instances.

4. In all pregnant women, on dissection, a particular cicatrix or scar, having a hollow or vacuity within, termed from its appearance in the quadruped, corpus luteum, and answering to the place of one of these ovaria is observable.

5. From analogy in fowls, in which the same kind of structure prevails, and where the descent of the ova into the uterus is well ascertained.

XLIV. From the ovum, then, conveyed in this manner (XLI. XLV.) into the uterus, and the state of the latter described, increased by the presence of the seminal fluid, conception we suppose to arise: and, with the same probability, we proceed next to trace the several appearances which succeed it.

Progress of the Uterine Contents.

XLV. From the retention of the semen in the uterus, it must necessarily act, while there, in two ways:

1. As already detailed, in giving animation to the ovum: and,

2. Which we are now to consider more particularly, as a peculiar stimulus, or organising balsam, producing that state of uterine surface necessary to form and evolve the connecting parts or appendages of the future production. For the retention of this fluid, as

insisted on, it is clear, like every other cause of irritation, must be to stimulate the surface to which it is applied: and as the uterus, like every other cavity, is furnished plentifully with exhalants, so this irritation on its internal surface, the ovum being yet too small for such an effect, must produce an excretion, which, like that from all inflamed surfaces, or surface in a similar state, possesses a tendency to connect parts, and forms into a membranous expansion for this purpose. This membranous expansion, from the peculiar direction it afterwards takes, as described by Dr. HUNTER, in its progress to connect the uterus and ovum, has received from him the names of decidua, and decidua reflexa; and, before his time, from RUYSCH, the term of tunica filamentosa. It constitutes, in early gestation, the greater part of the mass which forms an abortion; a proof that both the uterine excretion taking place is considerable, and that the semen continues to act as a powerful irritating cause.

XLVI. That the effect of the semen is really to produce this uterine inflammation, or a state similar to inflammation, we prove by the first appearances of conception, which can be traced by dissection: for the cavity of the uterus, on being opened a few days after conception, appears filled with a viscid glairy mucus, on removing which the surface below shows red and inflamed. This was particularly remarked by Dr. HARVEY in the uteri of Does, who may be considered as the first author of eminence who made experiments on this subject; and this appearance was regarded by him as the first sign of conception.

XLVII. From this view, then, the contents of the

gravid uterus come to be properly divided into two parts, a maternal and foetal. The former connects the ovum to the uterus, as already described; for till then the ovum may be considered as an extraneous substance in its cavity. This part, however, can only be ascertained as a maternal one in the early months; for by the expansion of the ovum, it comes at last towards the term of gestation to be entirely lost in the foetal membranes, and the only part of it we then ascertain to be maternal is that portion which forms part of the placenta, and which can only be injected from the uterus, not from the foetus*.

XLVIII. At first, then, this maternal part is the most considerable; and, for some time, the vesicle or ovum shows little change, which is proved by the appearance of abortions at this period. On removing the anterior portion of the fleshy bag they form at their expulsion, a small vesicle *only* is conspicuous. From this vesicle, when opened, a gelatinous fluid flows out, followed by a small white speck, which is the foetus. From the fluid, at this period gelatinous, it derives its nourishment, and has its parts gradually evolved, when the umbilical vessels appear. They continue shooting out till they reach the surface of the membranes to which they form adhesions; for we find them inserted at different parts of the cake. So soon as the umbilical vessels

* This is particularly proved by cases of extra-uterine conception in the abdomen, where the placenta wanting the maternal part was found in the form of a *thin membranous substance*. A remarkable case of this kind is published by Mr. W. TURNBULL, Surgeon in London, detailed with much accuracy, and which contains references to all the cases of extra-uterine conception related by authors.

are once attached to the placenta, a considerable change ensues. The fluids are then transmitted to the fœtus by the umbilical vessels alone. They consist of two arteries and a vein; and while the latter conveys the fluid into the system of the fœtus, it is returned by the former, after pervading its circulation, back into the placenta, where, by the exhalants of the latter, the useless or feculent part is discharged, and mixes with the fluids contained within the coats of the bag or vesicle. This is evident from these fluids losing then their former gelatinous nature, and acquiring an excrementitious state, which gradually increases as gestation advances. At first, also, as little is necessary to the circulation of the fœtus, so the waters we find in greatest quantity in the early months lessening progressively, as the fœtus requires the whole of the blood entering the placenta for its nourishment.

XLIX. The period when this change in the state of the fœtus, by the adhesion of the umbilical vessels, commences, is about the end of the second month; for till then, as observed by Sir R. MANNINGHAM, no appearance of umbilical cord can be traced; neither is there any regular appearance of placenta, the surface of the ovum being all alike. Soon after this period also, when the adhesion of the cord is observed, there appears near its extremity a particular vesicle, or bag, containing a whitish liquor; termed, therefore, by authors, the *vesicula alba*, having a duct leading into it, and performing a peculiar secretion, the use of which is unknown; for becoming gradually less transparent, it departs so soon as the cord acquires any size.

L. The cord thus connected (XLVIII.) we have observed to vary in the place of its attachment; but spreading out upon the surface of the membranes, it appears to shoot out its extremities deep into their substance, which, anastomosing with those of the placenta, a communication betwixt the uterus and foetus comes thus to be formed.

LI. The manner in which this communication takes place has been often disputed; and anatomy has been called in, on both sides, to decide the question. From the circumstance already observed, of the umbilical vessels not being connected to the uterus at first, till some evolution of the parts of the ovum takes place, these vessels will naturally, in their progress towards this connection, shoot out into small divisions, which being incapable, in this minute state, of penetrating the firm substance of the uterus, must anastomose merely with those of the maternal part of the placenta; and by this means a direct, though minute communication betwixt the uterus and umbilical vessels, comes to be formed,

LII. In proof that such a direct communication, in whatever way it may be formed, actually exists, it is observed,

1. That injections of a very penetrating nature have been actually made to pass from the system of the uterus into the umbilical vessels.

2. It is a fact agreed by all authors, that injections pass a certain way from the uterus into the placenta, or fill its spongy part.

3. On the death of the child, at any period during pregnancy, a flooding for the most part occurs. This can only proceed from the circulation, on ceasing in the foetus, producing an over distension of these small vessels; when a rupture of their very tender coats, and a consequent separation, must ensue.

4. The argument commonly advanced, of a want of hæmorrhage from the cord, on its division after delivery, except of what blood is contained in the placenta itself, affords no conclusion; for from the first moment of contraction in the uterus, the connection betwixt it and the placenta, as formed by minute vessels, is generally destroyed; but the body of the child filling up the uterus, and the latter contracting regularly, no hæmorrhage ensues. Where, however, any irregularity in this contraction occurs, a flooding in the course of labour necessarily comes on, which we find in practice frequently the case. These floodings also are most common towards the end of tedious cases, where an atony of the uterus in particular parts, and thus an irregularity of contraction has probably been induced. For, as a still more convincing proof that the *least* contraction produces this separation where the placenta has been improperly attached, depending from what we have advanced on the particular situation of the vessels, whence the menstrual flow had proceeded a hæmorrhage to a degree often fatal, ensues. From these facts, then, we conclude, that if the cord could be cut before the commencement of labour, a hæmorrhage from the uterus would flow from its extremity in a continued stream, and mark such a direct communication as insisted on.

5. In cases of morbid adhesion of the placenta, a direct anastomosis must undoubtedly take place; which,

if taking place at any time, must prevail always, though in a less degree.

6. As the foetus is very small at first, and the placenta, on the contrary, very large, it is clear the foetus cannot form the red blood in the placental mass; and as it must be drawn from the mother, if it took place by absorption, it should be altered as any other secreted fluid, and not be the same; but we find, on examination, that it is exactly the same.

7. No hæmorrhage ensues from the cotyledons of animals, after delivery, as happens from the human uterus when the placenta is removed. The analogy, therefore, between them, does not hold, and forms a strong proof against absorption in the human subject.

LIII. In this manner, then, with much probability, we judge the contents of the gravid uterus to be formed; and the progress of the distension of the vesicle, or ovum, comes next to engage our attention.

LIV. This distension at first (while the foetus is in its incipient state), is entirely performed by the waters. These we have observed to arise from an exhalant excretion; but how this arises it is difficult to explain. We observe, however, that wherever red vessels are to be found, that branches of a more minute division, or an exhalant nature, always attend; and since exhalation is in proportion to the inhalation taking place, so the connection between the uterus and placenta being soon formed, and thus a quantity of blood transmitted to the latter, while the foetus has yet no attachment to it, we suppose that, in order to allow the circulation to proceed between the uterus and placenta, this fluid collected must be discharged. The thinner parts of it,

therefore, we consider as poured into the cavity of the vesicle, or ovum, which distend it. But, on a communication between the fœtus and placenta, by the adhesion of the umbilical vessels taking place (XLVI. XLVII.) and that the fluid of the placenta passes directly into the circulation of the fœtus (XLIX.), as exhalation, or the excretion from minute vessels, depends much on the slowness of the action in the larger, so this slowness, or stagnation in the placenta, being lessened, the excretion will necessarily come to be diminished; though for a considerable time only in a very small degree, and transmit only the more purely serous part.

Hence we find the waters at first of a gelatinous consistence; next, more of a serous nature; and, at last, entirely excrementitious, possessing, indeed, often a tendency to putrefaction; while, at the same time, they are in larger quantity in the early months, and gradually decrease till the end of gestation.

LV. These exhalants of the placenta have never yet been traced; and the same may be applied to other parts of the body, where, from disease, they appear evidently to exist. Thus they have never been distinctly observed in the brain; though collections of a serous nature, entirely resembling the waters, and that to a prodigious quantity, very often occur.

LVI. That the origin of these waters is not from the membranes in their continuation, or at least not in a principal manner, is proved, because the more the latter are extended, the greater should be their quantity which we find, on the contrary, the reverse and the

same argument may be applied, supposing them an excrementitious exudation from the skin of the foetus; for in proportion to its size in the latter months, should the quantity of this exudation be increased.

LVII. From this consideration, then, of the waters distending the uterine cavity, and retaining it in that state, the foetus is to be considered merely as a passive substance. At first, it appears in the form of a small tadpole, floating in the little vesicle or ovum; and at about three months, we find it begin to assume something of a distinct form; the umbilical cord, with the vessels, being connected to the placenta, and each of the extremities appearing only as a small speck. Between the fourth and fifth months, however, most of the parts we find pretty complete; and soon after this its motion comes to be readily felt by the mother. From this period its increase is rapid; and at six months, it increases between eight and nine inches; from which, to the time of gestation, progressively increasing, its length is from eighteen to twenty-one.

LVIII. Having thus explained the changes which the contents of the uterus suffer, till the period of delivery, the changes of the organ itself corresponding to these we shall next attempt to investigate.

Changes of the Uterus.

LIX. As a certain state of the ovaria, then, we have considered as much influencing the appearance of the menses (XII.), so a particular change in this state, arising from the access of the seminal fluid, we are much inclined to believe as affecting the distension of this organ in its gravid state.

LX. That such an influence of the ovaria on the uterus is well founded, we have reason to conclude,

1. By cases of extra-uterine conception, where, though the foetus was not contained in the uterus, yet its distension, as usual, took place to such a degree, as, in consequence of the enlargement of its vessels, to occasion the same profuse and often fatal hæmorrhages, as in common cases, where such accidents occur in the advanced months of gestation.

2. By the small size of the ovum at first, and delicacy of its texture, compared with the substance of the uterus, against which it forms a resistance.

LXI. The changes, then, which the uterus receives, depending on this cause, we conceive to be,

1. An extension of its vessels, in consequence of distension; and,

2. An apposition of new matter to its substance, the natural effect of its increased quantity of fluids. And as the uterus, even in infancy, shows a greater number of vessels entering its composition than any other organ, being easily made entirely red by injection, so the facility of this extension will be much favoured.

LXII. From the state of the uterus, mentioned as necessary to the occurrence of conception, this extension we judge to begin in that part where the vessels are largest, and to which a determination chiefly prevails in the unimpregnated state, from forming the source of the menses. This we find to be its fundus: and from the latter constituting the far greater division of this organ, the changes which happen in its increase are mostly

confined to that part, for the greater period of gestation.

LXIII. The first change observable in the fundus, from its particular shape, is found to be an increase of convexity, its corners losing any acuteness they possess, and its surface becoming more extended. This increase naturally produces an alteration in the situation of the tubes and ovaria, by which they are placed lower, and consequently more towards its centre. Such a change, however, is not sensibly apparent till near the fourth month. At this period the fundus begins to emerge from above the brim of the pelvis; previous to which, when its increase first takes place, as the ligaments, as well as the fundus itself, from their situation near the latter, and also from their connection with the vessels which supply the uterus, by sharing in proportion to their size in the same distension, receive, in some degree, an elongation of their fibres; so, in consequence of this, the uterus of course descends lower into the vagina, and occasions the contents of the abdomen, which it partly supports, to follow the same direction; thus producing a certain flatness of the belly, which gives one mark of conception.

LXIV. In support of this opinion, that the descent of the uterus is not to be ascribed, as supposed by authors, to the weight of its contents, we find that in cases of prolapsus, where it is void of any contents at all, its descent happens to a much more considerable degree; and as we can see here no cause of disease to produce this relaxation of its ligaments, as occurs in prolapsus, we must, therefore, ascribe it to a natural elongation of their fibres, the consequence of concep-

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tion; for it has been likewise observed, that when, from disease, as in case of schirrus, these ligaments were incapable of such elongation, abortion soon ensued.

LXV. But on the emerging of the fundus above the brim of the pelvis, as observed (LX.), the direction of the ligaments (depending on that of the fundus) being altered, in proportion as the vagina was formerly shortened, it comes now from this period to be lengthened in the same degree, and to embrace more closely the os uteri. About the fifth month, ascending in this direction, it gains half way between the pelvis and navel; when, on pressure, its tumour can be felt inclining as it rises from being loosely situated in the abdomen, and, therefore, wanting a support a little to one side. At six months, it reaches the navel itself, which receives a protuberant appearance from being pushed out by it; and from that period, to the term of gestation, progressively augmenting, its increase is terminated by its pressing against the scrobiculus cordis, or pit of the stomach.

In examining also the external appearance of the gravid uterus, we find it irregular in its surface, having projections here and there, from the members of the child pushing out.

LVI. The exact height, however, which it attains, is different in different women; and much depends on the particular make of body, and the degree of space in the abdomen, to allow its expansion; for in tall women, in whom the abdominal cavity is more confined, it is naturally directed more upwards, which is the case,

likewise, in every first pregnancy, as the parietes of the abdomen form then greater resistance to its pressure, while, in short women, in whom the space is proportionally widened, it spreads more out as it ascends, and presses a good deal to one side.

LXVII. In this manner, then, does the augmentation of the uterus gradually proceed in its gravid state, till the term of delivery; and the manner in which its circulation is conducted, to effect this augmentation, deserves also to be attended to.

LXVIII. As during the period of life that child-bearing occurs, a plethora of the arterial system we have observed (X.) to prevail, and a greater resistance is made to the transmission of the fluids by the venous coats, so a stop being put to the passage of the usual evacuation from the arterial extremities, by a more firm adhesion of the uterine contents at that part whence the flow usually proceeded, a fullness in them naturally takes place. This fullness exciting their contraction, is then propelled into the veins in greater quantity than usual; while, in consequence of their texture, a slower transmission of it, and of course a greater distension of their coats, must occur; and, at the same time, to favour an accumulation of their contents, and render their cavities more easily dilated, their trunks run all in a straight direction; but the arteries again observe, on the contrary, a serpentine course, by which their fibres being more extended, their contraction is consequently quicker, and rendered likewise more powerful; and an excessive accumulation of their contents, in proportion to that of the veins, thus prevented.

LXIX. The vessels of the uterus being always larger

at that place whence the usual discharge of the *menfes* proceeded, is found to continue still the case when this organ is extended by *gravidity*; and, therefore, on opening the abdomen, from mere inspection externally, the place of the *placenta* may be known.

LXX. From this view (LXV.) then, we consider chiefly a venous plethora as the cause of the uterine distension; and all kinds of plethoræ of an active nature are to be referred to the arterial; those of a passive to the venous system. Hence most of these hæmorrhages of the early months ending in abortion, before the veins have acquired much size, are to be considered as arising from a rupture of some of the arterial extremities, and, therefore, of an active kind; while, on the contrary, those of advanced gestation, as depending on the tension of the venous coats, are to be considered as passive; and, as a proof, are chiefly to be got the better of by rest and a horizontal posture.

LXXI. Though this augmentation of the uterus, as described (LVIII, &c.), arises, for the most part, in the manner related, from the increase of its fluids (LXV.), yet some degree of addition to its solid parts we conceive also to take place; for, as in proportion to extension, the degree of pressure from the distending power is increased, so this pressure, we suppose, produces an apposition of new matter; and this pressure being greatest internally, the vessels, therefore, we find most apparent on its external parts.

LXXII. That an apposition of new matter occurs, we believe,

1. Because, wherever fluids are increased in any part to a considerable degree, the solids receive always, in-

dependent of their extension, some degree of addition,

2. Because certain lamellæ are observable in the structure of the gravid uterus, which are not to be found in its unimpregnated state; and these lamellæ we conceive as giving it that particular spongy appearance, taken notice of by authors; but, on its contraction, they are rendered equally solid with the rest of its substance.

3. Because it never regains its original size; and this is necessary, as these lamellæ add something to its solidity; and in order, therefore, to the regularity of future menstruation (VII, &c.), it is requisite its vessels should be somewhat more enlarged.

LXXIII. But the extension of the uterus does not take place, in every part of it, at the same period of time; this depends on the degree of laxity in its structure, which varies in its different parts. Hence its substance, as being more lax at the fundus, we have observed, proceeds quickly in its state of dilatation; till, in consequence of its extension to a certain degree, a balance between the resistance of its fibres, and those of the cervix, naturally more rigid, is produced. Then the distension of the latter also commences. This is generally about the fourth month, and advances in proportion to the number of its vessels admitting the increase of its fluids, in the same progress with the fundus. At the seventh month, about two-thirds of it are extended, and the remaining portion, being still more rigid, requires for its accomplishment the full term of gestation; when, from this increase of its size, it receives also a more rounded form, conspicuous ever after, even in its contracted state, and possesses less of that ellipsis, or tench-like appearance, remarkable during virginity.

BOOK I.

PREGNANCY.

I. **WE** have thus explained the several circumstances (III. to XLII.) on which we suppose conception to depend; and the several changes also, when taking place, it occasions in that part of the system to which it is more immediately confined (XLIV. to LXXIII). We shall next consider the effects of these changes on the body at large, in the several disorders that attend this state, comprehending the first class of diseases that form the subject of Midwifery.

II. Pregnancy may be defined a certain *inflammatory* disposition of body, or *nearly* approaching to it; attended with an *increased frequency of the pulse*, and other *febrile symptoms*.

III. That such a disposition prevails, we endeavour to prove:

1. From the fizy appearance of the blood drawn, which discovers, at this time, the *buff coat*, or separation of gluten on its surface, similar to that appearing in cases of inflammatory disease, and also a defect of the *oxygenous principle*.

2. From examining the state of pulse, which is found *always fuller*, and some strokes *quicker*, than previous to gestation.

3. From a consideration of the phenomena that attend it, particularly in its more advanced stage.

IV. In marking these phenomena, a considerable variety, it is proper to observe, occurs in different cases, connected with peculiarity of constitution, &c.; but in every case, in a greater or less degree, certain affections pretty constantly arise; some of which, independent of other circumstances, are even considered as giving evidence of the pregnant state.

V. From the several exciting causes, which are peculiar to the different stages of its progress, the diseases of pregnancy may be reduced to three heads:

1. Those which arise from simple irritation, or the sympathetic.

2. Those which owe their origin to distension of parts, and increased circulation into them, or the plethoric; and,

3. Those which join to this the pressure of the gravid uterus, acting as a mechanical cause; termed, therefore, the mixt.

DISEASES OF PREGNANCY.

1. *Sympathetic Diseases.*

VI. Of the first class, the principal diseases are, af-

fections of stomach viz. dyspepsia, malacia, cardialgia, and hysteria.

They have been commonly confounded together, and no distinct or separate consideration of each has taken place. This, however, is absolutely necessary, in order to have a just idea of the means proposed for their alleviation.

Dyspepsia.

VII. The first species, or dyspepsia gravidarum, is marked by the following train of symptoms:

Soon after coition, a sense of lowness and depression is felt; various irregular pains occur in different parts of the body. These are succeeded, after a certain time, by sickness and nausea, attended with a vomiting of matter, various in its appearance. This vomiting generally prevails most in the morning, or after eating, and is attended with a whimsical capricious appetite for substances of an unalimentary kind. It is generally most severe in the erect attitude, and somewhat relieved by a horizontal position. The duration of these symptoms varies much in different cases. They usually depart after the third month; but their effects are frequently very severe in irritable habits, producing an emaciation and decay of the flesh, to a very considerable degree.

VIII. From the appearance of the matters discharged, some authors have divided this vomiting into two kinds, the bilious and alimentary; the former being most frequent in the morning, the latter suc-

ceeding the reception of food, as soon as digestion begins to take place. The former is most severe, and requires chiefly, therefore, alleviation; the latter is less hazardous, from the efforts being less straining.

IX. The theory of these symptoms is somewhat obscure. The general causes of dyspepsia are known to be an impaired tone of the muscular fibres of the stomach, a particular state of its fluid, or some local affection impeding its functions. The occurrence of dyspepsia after conception is too quick to suppose it to arise from any of these causes; nor is the debility that succeeds conception even sufficient for this effect. It must depend, therefore, on a different principle; and to explain it, we observe, that the stomach has a connection, in a particular manner, with every part. It is to be considered, in all respects, as a peculiar organ, and as the centre of sympathy; or, as giving the alarm, when any part of the body is in a morbid or altered state. This power of the stomach is not explainable by any apparent connection betwixt it and the sympathising part; and analogous to these effects of conception upon it in the female, we find, in hypochondriacs, a proof of its extensive connection with every part, that every debilitating cause occasions immediately symptoms of dyspepsia.

But though originally the effect of sympathy, where dyspepsia is long continued, debility will come to be induced; and on it the obstinacy of the disease will at last depend. The cause of sympathy then ceases soon to act; and the impaired tone of the organ, to which it gives origin, continues the disease till that general inflammatory diathesis, marking the whole of pregnancy,

but not exquisitely formed till after the third month, removes any affection depending on this cause.

X. These symptoms of dyspepsia are remarked to attend all those states of uterine affection, in which the evacuation is suppressed. They are here not to be considered as dangerous; and a favourable prognosis, therefore, may always be made; yet the efforts of straining, when violent, occasion abortion at times.

XI. From the history of the disease delivered, a division of it into two stages is necessary to be observed, for the success of our practice.

The first of them may be termed the stage of *sympathetic* irritation.

The second, of correspondent debility; and for each of these a separate treatment is required.

XII. The first is attempted by blood-letting, though this requires caution in particular habits, and should only be employed in the real plethoric state: by the use of opiates, which requires also restriction, as prejudicial to the evolution or growth of the foetus. Their external application to the region of the stomach is often most successful; or their exhibition, by way of injection; by gentle exercise in the open air, with a variety of scene and amusement, so as to withdraw the attention, as it were, from the morbid feelings.

The second is effected by the use of all those remedies prescribed by physicians in dyspeptic cases, as neutral salts in the act of effervescence, bitters, absorbents, &c.

Longing (Malacia).

XIII. The second species of this first class of pregnant affections is malacia, or longing; by which is understood an immoderate desire of some things formerly disagreeable, and a rooted aversion at other things formerly liked. Though like dyspepsia, at times attending diseases, in which the uterine evacuation is suppressed, yet it never rises to that exquisite degree, as from pregnancy. It is always to be considered as an affection of mind; and though no bad effects can attend the opposing the object of its wish or resentment, yet, if reasonable, it should be indulged, as the refusal increases that state of mind on which its continuance as a disease depends.

This disease has also been remarked as strongest in a first pregnancy; and for remarkable instances of it, recourse may be had to the different morbid collections of medical writers.

Heartburn (Cardialgia).

Next to malacia, or longing, is the cardialgia gravidarum, or heart-burn. It is marked by heat and pain in the throat and fauces, and an increased sharp salivary discharge.

Its cause we may ascribe to the same sympathetic irritation, producing the affections already enumerated; but here the digestive action would seem, as it were suspended, or so far weakened as to produce this vi-

tiated discharge, instead of the proper and complete chylofication which should take place.

Its cure consists in the use of gentle emetics, alkalies in various forms, particularly the lime water, or aqua kali, as also absorbents.

Hysterics (Hysteria).

XIV. Last in this class we here placed the hysteria. It only at this time attacks those naturally predisposed to it; and there are two particular periods of gestation, at which it is apt to show itself. The first is the time of conception, and the second is the after-period of quickening. But though not assuming the actual form of hysteria, women, in general, at the commencement of pregnancy, are very subject to pains of the head and teeth, which may be properly referred to this head.

In the treatment of hysteria, there is nothing at this time essentially different from its treatment at other periods.

XV. This then (from VI. to XIV.) forms the first class of diseases, induced by pregnancy; and they extend, generally, from conception to the middle of the third month, sometimes longer.

We now enter upon the second, or those which owe their origin to distension, and evidently partake of an inflammatory nature. But previous to their considera-

tion, it is proper to ascertain that state of the system which gravidity induces, independent of local affection; and which, though formerly hinted at, comes only at this period to be fully established, and, from the occurrence of certain morbid symptoms, to be strongly marked.

General State of Pyrexia induced by Pregnancy.

This state consists in the formation of pyrexia, or the proper febrile form, by an addition of certain characteristic circumstances to the state of the pulse mentioned. These consist in a manifest exacerbation of febrile symptoms, twice a day, corresponding to the natural increase of pulse; the evening exacerbations of which are most considerable, being denoted by flushing of the face, heat of the palms, thirst, disordered sleep, &c.; and this species of fever, though not just so violent in most cases, is similar to what is termed the hectic, or occurs, in other instances, of permanent local affection.

XVI. The causes of this fever we refer to two heads: 1st. uterine irritation; and, 2d. plethora. Uterine irritation, indeed, in the present case, we find not sufficient for inducing inflammation; and no actual inflammation occurs during the first three months, when such simple irritation alone prevails; for, till the eighth week, no symptoms of turgescence can really take place, as that forms properly the first period, when a

stop is put to the usual evacuation. This additional cause of plethora, then beginning to take place, it is proper we should next endeavour to explain.

Dr. Lobb has advanced some very ingenious observations against this idea of a plethora existing during the whole of gestation. They are drawn chiefly from a consideration of the quantity of fluid necessarily required for the formation of such a large body as the fœtus and connecting parts, and from observation of the strongest and healthiest women being least liable to abortion. By plethora, however, we do not mean any increased quantity of fluids in the system in general; the previous complaints plainly show that such cannot exist, and it will be too absurd to contend for such a circumstance taking place. It has been alledged, indeed, that the secretions during pregnancy are all diminished; but even allowing this, of which we have no proof, if Dr. Lobb's reasoning is admitted, it will still be insufficient. To explain this subject, then, we observe, that whenever irritation prevails in any part, by the laws of the circulation, a considerable afflux is directed this way, and this afflux must produce a natural distension of such parts, while to prevent any morbid circumstances occurring it is necessary, 1st, that the facility of distension in the parts should be equal to the afflux, otherwise morbid symptoms in the adjacent parts must arise from accumulation; and 2d, that the supply the system receives should be greater than usual, in order to preserve the natural balance of circulation in parts.

XVII. In the beginning of pregnancy we know, that the uterus forms some degree of resistance to its distension, and that in proportion to the quantity of fluids

sent out, which is determined in part by the particular irritability of constitution. This of course endangers abortion, as the contents of the uterus are then not firmly attached to its cavity. When rising, however, to a certain height, in order to prevent such a circumstance, by a law of nature, in consequence of the sympathy prevailing between the breasts and the uterus, the former receive too a degree of irritation, and an afflux in consequence of this is likewise directed to these glands, lessening that towards the uterus. But as the enlargement of the uterus proceeds, the irritation here being superior to the other, so the afflux towards the uterus is increased, while that towards the breasts in general gradually diminishes, and departs entirely in the last months.

XVIII. To explain then, on the foregoing reasoning, the cause of the diseases of this class, we remark, that from the first moment of conception, in consequence of its particular afflux to the uterus, the blood continues determined in unusual quantity to the whole of the internal parts; and of course, that a state of collapse, or diminished action of the vessels on the surface is produced; that this accumulation internally, when proceeding to a certain height, occasions an increased action of the larger vessels, to restore the balance lost; and hence various morbid affections, both in the hypogastric region, and in the system in general, arise.

XIX. That such a state of the system takes place at this period, we prove from this circumstance, that abortions are then most frequent, that women are the more liable to such accidents, in proportion to the coldness of the atmosphere, by which this accumulation is the

more increased; hence every practical acoucheur must have remarked, that miscarriages are more frequent in winter than in summer; and many women too, during this period, we find remarkably subject to obesity, as marking such a diminished action of the surface.

XX. It is this unequal balance that, during gestation, is observable in the system, which has given occasion to the ideas of plethora, so universally received by physicians, in accounting for the diseases of pregnancy, and which has led to the method of cure by venesection, so generally practised in this state.

XXI. That venesection may be useful at times, in lessening the power of reaction in the larger vessels where unusual accumulation to the uterus occurs, and increases the natural state of pyrexia to a morbid degree, we do not deny; but in every case it is more as a palliative than a radical cure, and the indiscriminate use of it, where no violent reaction occurs, must be attended with the worst of effects, where women are of a delicate irritable habit, by increasing after gestation the cause of the complaints it is intended to remove.

CLASS II. *Plethoric.*

XXII. From this state of the system then we have endeavoured to establish, different affections arise, and the first of these that occurs to be noticed is pain and tumefaction of the breasts.

Affection of Breasts.

XXIII. The breasts have been always allowed by authors to possess a remarkable sympathy with the uterus, and to account for their present distension; besides this sympathy they have endeavoured to explain it, by an anastomosis between the epigastric and mammary arteries. This, however, Dr. MONRO has of late demonstrated to be so inconsiderable, that it cannot be explained in this way; and the present complaint, therefore, we ascribe to the internal accumulation of the system to the uterus, which at first receiving an enlargement of its bulk more slowly, and thus forming a resistance to the entrance of the accumulated fluids, excites, as we formerly observed, a sympathetic affection of the breasts, which, at the same time, are the only organs unevolved, and capable of admitting an easy distension.

XXIV. In proof of this sympathy we find, when in the last months, the resistance to the passage of the fluids into the uterus is lessened, so that its distension takes place with a more rapid progress than before; the farther turgescence of the breasts generally ceases, and they even become in some degree flaccid.

XXV. The treatment of the breasts, in this state, then, consists in endeavouring to palliate and allow their distension, till the latter period of pregnancy; and the means of performing this depends on the removal of pressure arising from articles of dress, and relaxing the part itself by various lubricating and emollient applications: nothing indeed is so pernicious in this case as compression. When pregnancy is wished to be con-

vealed, it would be to no purpose to point out the mischiefs that arise from it; but even with married women this fault prevails; and from a desire to conceal their situation, the same mode of dress is continued during pregnancy without any alteration. In a first pregnancy, it is even more hurtful than afterwards, for the breasts then become moulded into a certain form, which they always afterwards retain; hence, where compressed at this time, they are prevented from expanding, and the nipple, instead of continuing to elongate by the distension of the breast, and become more prominent, is generally flattened, and forced in, so that afterwards it cannot be easily grasped by the mouth of the child, and the task of nursing becomes impracticable; nay abscesses from this cause, before delivery, frequently form in the breast, which would never naturally take place at this period were compression avoided. It is, on this account, independent of constitutional reasons, that so few women in high life are capable of acting the parts of mothers, and that among the poorer class such obstacles more rarely occur.

Retroverted Uterus (Retroversio Uteri).

XXVI. But a more formidable disease, at this period, to which women are subject, is the *Retroversio Uteri*; it consists of the fundus, when enlarged to a certain degree, and beginning to be supported on the promontory of the sacrum, descending suddenly into its hollow, which, from its weight, occasions the os tincae, or other extremity of the organ, to be carried in the opposite direction, and thus so far alters the situation of the urethra

connected with it, that the emission of urine is prevented.

XXVII. The symptoms of this disease are marked by a slight degree of uterine pain at first; an inclination to press downwards gradually succeeds, with a desire to pass urine. At first, the latter is performed with difficulty, but soon the action of the uterus, attended with strong down-bearing pains, increasing, a total obstruction to the discharge of urine takes place; these symptoms proceed, and on examination, by a finger in the vagina, a tumour is felt advancing downwards, in proportion to the straining of the patient, and occasioning efforts similar to those employed in parturition. From the suppression of the natural evacuations, both by urine and stool, inflammation, in consequence of distension, must occur, and the uterine tumour at last coming to possess the lower part of the pelvis, becomes so enlarged, in consequence of the inflammation excited in it, by its displacement, as to prevent the possibility of its being replaced, the dimensions of the pelvis, at its superior aperture, being more contracted than those below. Acute fever, with delirium, at this period supervening, the patient is soon cut off; or, from the enlarged size of the bladder (which frequently in this last stage is known to reach as high as pregnancy in the 7th or 8th month, or much above the umbilicus), convulsions taking place, the patient by a paroxysm is carried off.

XXVIII. This disease, though formerly known, was first properly pointed out by the late Dr. HUNTER, who has written a very excellent paper on it, in the London Medical Transactions, and has published also

the dissection of a case of this disease in one of his elegant plates.

XXIX. This disease is peculiar to pregnancy, and the period of it, at which it can only happen, is any time from the third to the term of the fifth month.

XXX. In most women, it occurs at this period, in a slight degree; the first symptoms of pain, however, generally give an alarm to the patient; and if her situation at all admits rest, an horizontal posture, as giving ease, is what she naturally has recourse to. It never, therefore, in women of any fashion, occurs to a violent degree, and it is only amongst the poorer class, whose occupations do not admit the necessary care at this period, that it rises to a formidable height. Those women are particularly predisposed to it, in whom the pelvis is much enlarged behind, or in whom its general capacity at the brim rather exceeds, where any violent straining is then employed, it is sure to happen; it is only in a few instances that it has proved fatal; and several cases are mentioned, where the introduction of the catheter, in its last stage, being with difficulty effected, a most surprising quantity of bloody urine was discharged. The late Dr. YOUNG, of Edinburgh, used to mention one case, where he had taken away no less than eighteen English pints. Dr. AIKIN, of the same place, mentions a similar case, where he took off near twelve English pints; and in the different periodical publications, a number of remarkable instances are recorded of this disease. Two cases of it occurred in Edinburgh, to my own knowledge, which proved fatal, and practitioners are daily called in where it occurs in a slight degree.

XXXI. For the cure of this disease, two indications naturally arise, the first, to diminish the size of the tumour itself, preventing reduction, or to enlarge the dimensions of the pelvis at its superior aperture, so as to admit, where still ineffectual, the success of the former; and second, to replace it in its proper situation.

XXXII. The former part of the first indication is answered particularly by lessening the distension of the contiguous organs. The organ chiefly distended is the bladder of urine, and the catheter therefore should be immediately employed. In its use however here, it requires a very nice attention to the situation of the parts. It must generally be introduced in a direction different from what is usually observed. Where the disease has arrived at a considerable height, the male catheter will be more properly employed. Several attempts will even be necessary before succeeding, and you may be even repeatedly foiled. It will often take place at last, rather as a lucky hit, than as a real proof of dexterity. As the chief part of the cure depends upon the evacuation of the urine, the other means you employ are to be considered rather as auxiliaries to it. If ineffectual however at first, before repeating your attempts, let the contents of the rectum be evacuated, which will give some advantage if the bladder is much distended. It is unsafe making any attempts to reduce the fundus, as laceration of it may be the consequence. Fomentations therefore are the next means to be had recourse to; and if considerable fever is induced, or even without this, with a view to prevent inflammation, bleeding should be liberally had recourse to. These means will be much assisted by the posture of the patient, whose pelvis should be raised considerably higher.

than her shoulders, while laying in bed, to prevent as much as possible the increasing descent of the fundus. When successful, and the urine is evacuated, the replacement of the uterus is to be attempted, and the method of reduction consists in simply placing the patient on her knees and arms, with the head reclined, and introducing the hand lubricated into the vagina, endeavouring to push the tumour above the hollow of the sacrum to its former situation. When once replaced, rest and the horizontal posture are to be particularly enjoined, the urine for some time is to be carefully taken off by the catheter, and the patient not even allowed to make the common natural efforts.

XXXIII. But, where the disease has gained, from the neglect of the patient and unsuccessful attempts of the operator, its utmost height, and reduction cannot be effected, it next remains to inquire what methods are left to relieve the patient. The first suggested has been to attempt the introduction of a catheter into the os tincæ, which, being pushed through the membranes, may occasion by their rupture a discharge of the waters, and then abortion will ensue. It is indeed remarkable, and has been observed by all the writers on this disease, that no tendency to abortion naturally occurs, which can only proceed from the irritation being confined more to the fundus than to the os tincæ, which seems to lead somewhat to the theory of labour. Where the os tincæ can be reached with the catheter, when other means fail, it may be employed as a last expedient. But, at the same time, when we consider the slow progress that abortion frequently makes, from the greater part of the ovum, on which the enlargement of the uterus depends, continuing attached at this early period for

long after the waters are evacuated, the patient may die of the disease before this expedient has time to succeed.

XXXIV. A second means proposed in those desperate cases of this disease, where all others have failed, is the enlargement of the pelvis itself by the operation of SIGAULT. The circumstances which have favoured this proposal here, are

1st. That the chief difficulty to the reduction of the fundus is the different capacity of the superior and inferior apertures of the pelvis; for the fundus descending into a more enlarged space below than what it originally occupies, becomes so enlarged by inflammation that its original situation cannot contain it, and hence it cannot be easily pressed through the more narrow opening of the brim; while the latter, being enlarged by the operation of SIGAULT, promises therefore to give an equal space above, for the replacement of the fundus, to what it possesses below.

2d. After death, where the reduction could not even be made, by dividing the symphysis, it came to be easily replaced; but to this operation some objections may be made. In the first place, it is found, that even where it is performed in the progress of labour, and where no morbid state of the parts has taken place, the patient has been frequently cut off by the supervening inflammation. In the present case, the whole cavity of the pelvis is already in this state, and the addition of a new irritation, from the application of the scalpel, must very soon induce gangrene where only simple inflammation existed; for these reasons, little is to be expected from this operation, and it is more to be considered as a desperate resource than a safe expedient.

The same observations may be applied to another mean that has been thought of, and that is, the puncturing the bladder itself, to allow the discharge, as gangrene must soon succeed any wound inflicted in its substance.

XXXV. From the view then we have offered of this disease, too much attention cannot be paid to guard against its arriving at any height. Its first symptoms are slight, and liable therefore to be neglected; but, wherever, at this period of pregnancy, the least threatening of this kind occurs, the patient should be instantly confined to a horizontal posture, costiveness removed, and a suppression of urine, by the use of the catheter, timeously guarded against.

Fixed Abdominal Pains (Pleurisy, Cramps, &c.)

Another disease, to which women are first subject about the middle of gestation, is fixed pain of some part affected by the enlargement of the uterus.

XXXVI. When, from the stretching of the broad ligaments, it affects them, in the form of a pleurisy, or rather what may be termed fixed stitch of the side.—In these cases it is common to bleed, but more in order to prevent inflammation than as really curing the complaint. The intestines should also be cleared; and, after this, an anodyne glyster thrown up, which will generally alleviate the pain. Rest has also here an equal effect with any other medicine you can employ.

XXXVII. At other times such pains occur in the form of cramp, or abdominal spasm, and the same means will

be found effectual in their removal. It is remarkable in these cases, that their violence seems particularly increased by heat.

Convulsions.

XXXVIII. But a more alarming complaint than any we have mentioned, and which begins often at this period, though not exclusively confined to it, is the convulsions of pregnancy. They are generally sudden in their attack, without any previous signs to indicate their approach; more rarely, however, they are preceded by a weight, or heavy pain, in the uterine region, such as marks distension.

XXXIX. This disease attacks in paroxysms or fits. They are generally preceded by violent pains in the head, varying in its situation; wild motion of the eyes, which roll in an uncommon manner in their sockets; and a general determination to the head, appearing from the flushing and turgescence of the face. In the paroxysm itself, all sense and motion come to be lost, and the face, and some of the extremities, are distorted in a particular manner, while a frothy moisture issues at the same time from the mouth, and the tongue is forced out, or retained closely between the teeth, so as to suffer considerable injury.

That this disease in pregnancy is sympathetic, and arises from uterine irritation, is not to be doubted; but it remains a matter of doubt, whether in this case a fullness of the vessels of the brain necessarily attends this uterine irritation. Convulsions in pregnancy we find

occur in very opposite habits; at one time they attack the robust and evidently plethoric, at another time they attack those of an irritable and debilitated constitution; hence we would infer, that a turgescence of the vessels of the brain, or an increased impetus of the circulation to the head, is by no means necessary to this affection; that, as the circulation is generally irregular in the time of the paroxysm, such an accidental plethora may occur. But, in the cure of the disease itself, it requires no primary attention; and that the uterine irritation, or original morbid cause, demands chiefly our attention. To remove this in absence of the paroxysm, venesection taking off the uterine accumulation, should be performed; and that even liberally; the intestines are then to be cleared, and afterwards a large opiate exhibited in glyster to the seat of the affection itself: the principal indication seems to be to restore the energy of the brain, and that by the sudden application of cold to the face. This is a practice recommended by Dr. DENMAN, and which he has found succeed after every other means, particularly bleeding, has been ineffectually employed. Bleeding, however, in all cases of pregnant convulsions, is found a useful palliation. It is recommended by every writer on the subject; and, among the French particularly, was formerly used in this disease to a most extravagant height; but, in delicate women, the after-consequences of such evacuations are to be considered, and, where the disease is mild, and approaches somewhat to hysteria, venesection should be very sparingly employed.

XL. But this disease often arises from certain accidental causes, which cannot be relieved by the treatment enjoined: thus it sometimes depends on an improper position of the foetal head, pressing on some part

of the pelvis; or it is produced at times by an oblique position of the uterus, in some cases of distortion, where its expansion is prevented.

XXI. Where convulsions begin early in pregnancy, they are less to be dreaded; but in the latter months they are often alarming, and a single paroxysm has been known to kill.

XLII. In the convulsions of pregnancy, particularly where advanced, there is this peculiar circumstance, that the motion of the child is felt uncommonly strong;—a proof of that sympathy which subsists between the nervous system of the mother and that of the fœtus.

XLIII. Some authors have observed, that convulsions at this period are more common to the inhabitants of some countries than others, and that they occur more frequently, for example, in England than in Scotland. This fact, however, may be called in question; and I know, from some eminent practitioners, that in some parts of England a case of them is almost never known to occur; besides, without some peculiarity of constitution, can be pointed out to account for their more frequent occurrence, the difference in the mode of living is not sufficient.

XLIV. Where a woman has been formerly accustomed to this disease, there is less danger from its attacks in pregnancy.

XLV. All authors have agreed in considering distension of the brain as the cause of this affection; but dissections give no proof of such a cause existing: and why, there-

fore, continue a theory which is founded only on supposition? This disease, however, we shall have occasion afterwards to resume, as it is frequently combined with labour.

Palsy.

XLVI. Connected with convulsions, and which has been known to occur in the pregnant state, though very rare, is palsy.

XLVII. There is generally here no disposition in the habit, by which we can judge previous to the attack. The cause of it we can only refer to pressure. It generally comes to be very sensibly relieved, if not altogether cured, after delivery. It is liable, however, to return, with more severity, in a succeeding pregnancy; and, if not then departing after delivery, is found generally incurable. I never saw a case of it; and only two are mentioned, in his extensive practice, by the late Dr. YOUNG.

CLASS III. *Mixt Diseases.*

The last class of diseases that falls under our attention in the pregnant state is those from pressure, or where, in addition to the former cause of local plethora, a mechanical power is added, increasing it. The affections of this class are more numerous than any of the former,

and extend, at least, from the beginning of the seventh month to the period of gestation.

Costiveness (Obstipatio).

XLVIII. The first of them that occurs to be mentioned is costiveness. This is a disease which, from their mode of life, is at all times common to the sex; but, during pregnancy, from the pressure of the gravid uterus, it is increased to what may be termed a morbid degree. The symptoms which attend costiveness, and which are liable at this time to be referred to a different cause, are, a particular uneasiness of stomach, attended with a lowness and depression, a quickened pulse, a sense of abdominal stricture, vertigo, &c.

XLIX. Such a state of the intestines is favoured, independent of the pressure of the uterus, by the degree of fever mentioned as present in the system during the whole of gestation; by the greater indulgence of women of their natural sedentary life at this period; by the use of substances of an indigestible nature, which their appetite of longing frequently leads them to prefer; and, lastly, by an increased absorption of the aliment itself, in consequence of the pressure exciting more powerfully the action of the lacteals, so that the more purely feculent part only remaining in the intestines, is formed, by retention, into hardened scybala, or lumps, resisting the natural peristaltic motion for their discharge. Where negligent, this accumulation has been often known to rise to a violent degree, or to prove an impediment to labour; or produce very serious consequences after delivery.

L. An attention to the intestines is also necessary with another view, as it tends to prevent that local plethora of the hypogastric region from rising to the height of disease. The London practitioners are particularly attentive to this circumstance, and they find, that those women, in whom the bowels are kept rather lax, during the whole of gestation, are liable to few of the disorders that affect others in that state. To remove, therefore, this disease, or rather to prevent its formation, a diet of easy assimilation is to be preferred. Many authors recommend that, with this view, vegetables should be chiefly used; but this must be regulated by the constitution of the patient; for where she has been unaccustomed to a vegetable diet, such a liberal use of it, as thus enjoined, may produce symptoms even worse than the disease. On this account, it will be generally preferable, that the intestines be gently excited to action, and the matter contained in them prevented from forming into hardened scybala, by laxatives of an oleous, or lubricating nature. One of the best remedies of this kind is the castor oil, which is kept light by the junction of a small quantity of any spirit. It may be given in the quantity of two tea-spoonfulls, and repeated every second night, or occasionally as necessary. Besides this, many other laxatives may be mentioned, as, the magnesia, sulphur, cream of tartar, the soluble tartar, &c. But women are generally themselves in the habit of using some laxative: hence, as they are accustomed to it, and know its effects in their usual dose, they will be more able to proportion it. Where, however, the disease has gained a considerable height, more powerful purgatives must be employed; or, as this practice may be rather unsafe, emollient injections, which remove the accumulation, as being chiefly con-

fined at first to the rectum, are to be employed with a temporary view, and then the usual laxatives, proper to pregnancy, will have sufficient effect.

Piles (Hæmorrhoids.)

LI. A frequent effect of costiveness in the pregnant state, or at least, if not an effect, influenced by it, is the production of another disease, the piles.

LII. The piles consist of an effusion of blood from the extremity of the rectum, or the formation of small painful swellings in that situation, with terminate frequently in small ulcers or fistulous sores, the former being named the internal, the latter the external kind.

LIII. In pregnancy, from the state of the hypogastric region mentioned, a predisposition to this disease occurs; and where pressure takes place, interrupting the circulation about the extremity of the rectum, its vessels yielding from distension in particular places, part of their fluids comes to be effused into the cellular membrane, and the disease thus produced.

LIV. In proof, that accumulation, or a slowness of circulation in these parts, independent of pressure, is sufficient to occasion the disease, we observe in the other sex that those much accustomed to venery, or who have had frequent inflammations of the genital organs from a venereal cause, and in whom, consequently, a greater afflux to these parts has been produced, are most liable to its attacks.

LV. This disease is always troublesome, and in

women seldom to be radically cured, as its attacks are generally renewed from the same state of parts, recurring in a succeeding pregnancy.

LVI. In attempting however the cure of hæmorrhoids, three circumstances merit attention :

1. To remove as far as possible the causes producing disease; and this is only to be done by obviating constiveness, and enjoining a horizontal posture; for general bleeding, by lessening the force of circulation, will naturally increase the plethoric state of the venous system, occasioning soon a more violent attack of the disease; topically employed in this situation, it is unsafe, especially in pregnancy, and hence is very improperly recommended by many practitioners,

2. To alter the state of the part in the external kind, where tumours exist, by emollient and sedative applications; and in the internal, where there is merely a rupture of the venous coats, producing hæmorrhage, by the use of astringents to consolidate the texture of the parts; and,

3. To allay the pain and uneasiness attending the disease, by opiates in injection.

LVII. This disease, though at first only produced by pregnancy, is liable to have its future attacks recur, independent of this state, when any cause of irritation, exciting an increased afflux here, is applied: hence few women who have borne children are ever afterwards entirely free of the disease; nay, frequently after the menses entirely depart, it observes in many a periodical recurrence, a hæmorrhage taking place from this source twice or oftener in the season, and that to a violent degree, being preceded by an affection of the stomach,

and other symptoms shewing it now connected with the general state of the system.

Swelling of Legs (Edema. Varix).

LVIII. From the same cause which produces piles, when the uterus, increasing in its size, presses on the vessels that supply the circulation of the lower extremities, and thus retards the passage of their fluids, *œdema* and *varix* are produced. The first extends very generally over the lower extremities, and particularly on that side to which the uterus naturally inclines; it begins at first in the feet, next occupies the legs, then rises to the thighs, and even is extended to the labia pudendi; at first this swelling yields to a horizontal posture, and is generally gone in the morning, though considerable at night. In its progress however, as the parts come to yield to the distension, no change is perceivable at any time; it is more considerable in twins, and often gives a sign of them by occurring in women then, though not appearing in their former pregnancies. If the constitution is sound, there is no danger from this complaint, as it generally departs after delivery, and that even in the space of twenty-four hours. Where however in the habit there is a natural tendency to dropsy, the foundation of it is frequently laid at this time; and, by the pressure on particular organs, a tendency to schirrus is afforded.

LIX. We can only here aim at palliation by a horizontal posture, the use of mild laxatives, and occasional venesection, if the patient is robust. Where real dropsy occurs, it is displayed by a general affection of the body, as well as the *œdema* of those parts, influenced

by the pressure of the uterus; other means are then to be attempted, as gentle exercise, friction, and the usual remedies employed in the other cases of dropsy; though there is a probability that the patient may sink soon after delivery.

LX. Varix again consists generally in the partial distension of some of the veins of the lower extremities, their coats being more lax at particular places, and yielding to the impulse of the fluids: it is very seldom, however, they yield to that degree as to occasion any rupture; if it should occur however, astringent applications may be had recourse to; but in the form it commonly appears, we are merely to attempt palliation, by the same means recommended in the treatment of œdema.

Spasmodic Pains (Spasmi).

LXI. These complaints last described are succeeded by spasms of different parts; for as the uterus increasing retains such a number of muscles in action, from some added accidental irritation they are frequently thrown into a spasmodic state, and thus cramps of the thighs, pains of the legs, &c. are produced. They generally go off of themselves, being merely temporary. We have indeed no cure for them, though, when violent, they may be palliated by opium.

Cough and Dyspnoea.

LXII. In the last months of gestation, when the uterus has gained nearly its utmost bulk, and reaches so high as to compress the diaphragm, cough and dyspnoea are

produced. These symptoms are very uneasy to the patient, and more so in the first pregnancy than afterwards. They are also more considerable in the case of twins, and where the uterus receives an uncommon distension from too great a quantity of waters: all we can aim at here is to palliate. If the breathing is more affected at times, and the disease seems to attack more in fits, venesection will then be useful. If the cough is much increased by the horizontal posture, and particularly troublesome in bed, the situation of the patient must be kept as erect as possible, and an opiate, to lessen the sense of irritation, administered.

Vomiting.

LXIII. From the state of these parts, the stomach is frequently brought also to sympathise, and vomiting, similar to what occurred in the commencement of pregnancy, is induced. It is here even less, in our power to palliate, and all the means we can employ is the use of small quantities of easy assimilated food at a time; and it will be even necessary for the patient to keep herself very abstemious. It has been advised in these cases, where the vomiting is very severe, and threatens a premature occurrence of labour, to attempt altering the position of the uterus, and to incline it more to the opposite side, that the situation of the stomach may not so readily be affected. This is an expedient however we cannot easily employ, and it will require more attention to retain it than the patient will chuse if employed.

Incontinence and Suppression of Urine.

LXIV. Within a few weeks of delivery, as the uterus

has gained its full extent, it inclines to descend a little towards the brim of the pelvis, preparatory to parturition: in some women it does this more than in others, and is more liable to do it in a first labour than afterwards. In this way, as it comes to press on different parts of the bladder, it naturally affects the discharge of the organ, and thus either incontinence or suppression of urine ensues. In the former case, as a rawness or excoriation is liable to be produced, a thick compress or piece of sponge should be properly fixed to receive the urine flowing from the urethra, thus to render the situation of the patient as supportable as possible. In the latter case, the catheter should be timely employed, and attention paid that this symptom do not continue during the progress of labour.

LXV. These form then the several diseases to which pregnancy is subject: few of them are really in their nature dangerous, though their violence may be increased by mismanagement, or some peculiar state of constitution rendering their effect more powerful.

Accidental Diseases.

LXVI. During pregnancy, women are subject to those other diseases which may affect them at any other period; and their management also, from the state of gestation, is a point requiring particular attention. We shall offer some observations on a few, that have been mentioned by authors as most commonly occurring.

Dropfy.

LXVII. Women, from their more lax constitution, are more liable to dropfy than the other sex; and ascites fre-

quently takes place during the time of pregnancy. If existing before conception, it is often difficult to distinguish it from pregnancy; and the very first practitioners have been deceived in offering an opinion with regard to the existence of pregnancy in this case. With respect to its management, diuretics are to be preferred to every other means, as least liable to endanger abortion; and where, from the very great distension, symptoms are urgent, tapping may be even performed, and that without any danger, only observing to make the puncture on the opposite side from that to which the uterus inclines. I lately attended a case where the operation was twice performed during the time of gestation, and the last time even within a few weeks of delivery. Some authors have advised, instead of the operation, that a catheter should be passed within the os uteri, to rupture the membranes, that a premature delivery may be brought on; but I would ask such authors, on what does the progress of dropsy depend? certainly on an increasing debility of the system, which is the cause of the original affection. It is well known to every practitioner in midwifery, the hurtful effects which arise to the system, either from artificial or premature delivery; and in the last case particularly, as the uterus has not gained its full extension, the placenta continues so firmly attached, that you cannot depend on the quantity of hæmorrhage that may take place, and thus the system may be so far weakened as entirely to cut off any future hopes of cure. Besides, if allowed to go to full time, the labour is generally sufficiently easy; and if there is no morbid affection of any of the viscera, there is then great prospect of recovery; but if there is, the patient generally sinks soon after parturition, which is even another argument against premature labour, as we cannot accurately determine, before-

hand, with regard to the cause of the disease. This complaint was formerly more frequent during pregnancy, when the too liberal use of venesection prevailed for the cure of pregnant diseases. The French carried it to more excess than ever we have done in this country; and hence, in perusing the obstetrical writers of that nation, you will find in their collections of cases a greater number of instances of dropsy combined with pregnancy. MAURICEA, for example, mentions several remarkable cases of that kind, where, even on delivery, the abdominal tumour, from the excessive distension, was no way sensibly diminished. In the last months, as the uterus presses up the diaphragm, and impedes the functions of these parts, the accumulation necessarily occurring from this cause gives a tendency to hydrothorax, the foundation of which is often laid during pregnancy. Anasarca is generally the mildest form of the disease; and unless combined with some of the others, it soon departs after delivery. Dropsy of the ovarium again very rarely occurs during the period of child-bearing, as that state of the ovaria which favours its occurrence is rather the effect of age; hence it more commonly simulates pregnancy than is combined with it.

Whites (Fluor Albus).

LXVIII. Another disease, that occasionally appears during pregnancy, is fluor albus. It is generally of that species, the seat of which is confined to the glands of the vagina; it depends, perhaps, on the pressure of the gravid uterus on the superior parts of the pelvis, occasioning an unusual determination to the vagina, and which, perhaps, is necessary, that the glands may be accustomed to a pre-

ternatural secretion of their contents previous to delivery. This, however, we find rise to a morbid degree, and the discharge acquires a considerable acrimony. For its palliation, astringent injections are to be occasionally thrown up, and compresses applied to the parts to prevent excoriation.

Rupture (Hernia).

LXIX. When, previous to gestation, a patient has been subject to hernia, the state of the disease is generally affected by the enlargement of the uterus. In all cases of this disease, two stages of its progress may be marked; the first we may term that of simple protrusion; the second, and more dangerous, of morbid adhesion: if the disease is only in its first stage, as the uterus enlarges, and the intestines are carried up by it, these herniæ generally disappear, the inguinal about the fifth or sixth month, and the umbilical again about the eighth. If in the second stage again, and the intestine does not yield so as to be carried upwards by the uterus, the pressure of the latter on it in its morbid situation always endangers strangulation: wherever it can be easily reduced it should be done, and great attention paid to the state of the intestines. In labour, particularly, every effort of voluntary straining should be suspended by the patient as much as possible; and if symptoms of inflammation should appear, or those which at another time indicate the operation; labour, if not commenced, is to be immediately brought on, that, the pressure of the uterus being taken off, gangrene may be prevented. The umbilical hernia has been supposed as most frequently occurring in pregnancy; and it has been remarked by authors, that adhesions in this species more readily form and render

the consequences during pregnancy more to be dreaded: the disease indeed, though continuing for several pregnancies, generally proves fatal at last; and this is favoured by the injury which the intestine naturally suffers from the efforts of labour, giving a tendency to gangrene.

Stone (Calculus).

LXX. Some authors have mentioned calculus as a disease also liable to affect pregnancy. Women, however, have been observed as less subject to this disease at all times, and that chiefly from the difference in the structure of the urinary passages, giving an easy outlet to the stone when formed. From this, then, we may conclude, as an obstruction of these passages more readily occurs in pregnancy, the disease should be at this time more frequently met with: but experience by no means confirms this; and though instances are recorded of labour having been impeded by this cause, yet they are so very rare as to have no influence on general practice. Extraction would certainly be, at this time, highly improper; and if even forced into the urethra, from the structure of the parts in the female, it can be readily pushed back. You will meet with a few singular cases of this disease, at the present period, in the Memoirs of the Royal Academy of Surgery.

Nephritic Complaints (Nephritis).

LXXI. From the same cause of the pressure of the uterus on the ureters and region of the kidneys, nephritic complaints may be induced; for their secretion, and even

evacuation being impeded, gives a tendency to the formation of nuclei, which afterwards form into regular concretions when descending into the bladder; and these complaints often begin during pregnancy, of which, previous to this, there was no appearance.

Jaundice (Icterus).

LXXII. Connected with nephritis, and arising from the same source of uterine compression, it remains to mention the *icterus gravidarum*. It is supposed to arise from an obstruction to the mouth of the ductus communis choledochus, by which the passage of the bile into the duodenum is prevented, and its return into the system occasioned. It is, in this case, merely a temporary disease, and readily departs after delivery; Mr. WHITE, of Manchester, has greatly recommended the use of raw eggs in its cure; and in what way their action is here exerted we shall leave that ingenious author himself to explain.

Veneral Disease (Lues).

LXXIII. Women, during pregnancy, are less subject, it has been remarked, to the febrile contagions: they may, however, be affected with a venereal taint. It has been alleged by authors, that the cure of the constitutional disease cannot safely be conducted at this period, as endangering a premature delivery: but in all the cases of this kind that I have had an opportunity to attend, I have found them more easily cured than at any other time, and a very little mercury is generally sufficient to effect it. It is the want of attention to this circumstance that the natural state of pyrexia existing during pre-

gnancy is favourable to the action of the remedy, and that the same quantity of mercury should not be used as at another time, which has occasioned those hurtful effects commonly attending its use at this period. The mercurial fever, therefore, should never be carried here to any height; and if the practitioner understands the proper principles of treatment, there is no difficulty of curing it during gestation.

Salutary Effects of Pregnancy.

LXXIV. We have thus seen the several morbid effects which gravidity is liable to induce: but it is not to be denied that its influence at the same time is often considerable on the constitution, and that in the removal or palliation of some diseases which occur in the unimpregnated state. Chlorosis, and that species of hysteria peculiar to the virgin state, are entirely removed by it. Phthisis pulmonalis receives a most sensible relief, and has even its issue protracted as long as pregnancy remains, though the patient is liable to sink soon after delivery. This has generally astonished physicians, and the cause of it has not yet been properly explained. In the——

1st place, we observe, that the uterine system, and the parts sympathizing with it, are the seat of all increased determinations during pregnancy. Hence the quantity of fluids must be lessened to the seat of the disease, and favour a re-union of texture where ulceration has taken place.

2. A general disposition, favourable to healing, or a tendency to that general inflammatory diathesis, which produces, in divided parts, a benign pus, is con-

spicuous, and which Dr. STARCK's late remarks on tuberculous consumption shews the propriety of; and,

3. A defect of the oxygenous principal prevails, and the mind receives a sensible alteration, the effect of which we cannot determine, though it has been observed, that from mania a similar relief takes place in this disease as from pregnancy.

General Treatment of Pregnancy.

LXXV. Having finished the diseases of pregnancy, it is proper, before concluding the subject, we should offer some observations on the treatment of pregnancy itself, independent of any diseases that may occur. The treatment of women during gestation has varied much at different times; at one period they have been considered as in a state of disease, and abstinence very strictly enjoined. This was the fault of all the more early writers, while many of the moderns have advised, in their management, the opposite extreme. There is a proper medium at this time to be hit; and if real disease does not take place, a predisposition to it, at least, is always afforded. Hence, in those who are naturally robust and young, a more sparing diet will be found useful; while in those whose constitution is more enfeebled, such restriction cannot well be borne. This has been very ably pointed out by Mr. WHITE, who has gone so far as to inculcate in such situations the use of cold-bathing and other tonics, as the most likely means to prevent abortion. Besides diet, the exercise of women should, during gestation, bear a good deal of restriction; for we find, that women are more liable to abortion than any other animals, and this can only proceed from the erect posture, by which the muscles are retained in an uneasy extended state, so that any increased motion at this period must give them a

tendency to contract, while the incumbent weight itself possesses a natural inclination to descend. In the latter months of pregnancy this attention to rest is particularly necessary, and a horizontal posture should be frequently indulged in. In the early months again, every circumstance that tends in the least to confine the situation of the expanding uterus by its pressure becomes highly improper; hence tight lacing is frequently the cause, if not of abortion, at least of several of the morbid affections which occur during pregnancy in that situation.

From what we already observed on the effects of pregnancy, the mind of women seems at this period remarkably weak and irritable; hence they are easily affected by the slightest causes; and, as their passions are liable to be excited, every thing that may tend to disturb their repose should be studiously guarded against. On this account, so attentive are some nations to the state of pregnant women, that no person is allowed even to knock loudly at the door, nor can the husband be arrested at this period.

BOOK II.

ABORTION.

I. **F**ROM the complaints of pregnancy, increased to a violent degree, the sudden application of any power producing a morbid determination to the uterus, so as to overcome its natural passive state, a morbid affection of some of the parts establishing the connexion between the organ and its contents, or from a natural irritability the organ itself possesses, its action is often excited at a premature period after conception, occasioning the exclusion of its contents in their imperfect state, termed Abortion.

II. The symptoms which distinguish this accident are,—the occurrence of periodical pains, attended with a *nifus*, or pressure downwards, preceded by a weight in the uterine region, and accompanied, more or less, with hæmorrhage.

III. Two periods of pregnancy have been remarked as most liable to this accident; the former of which, extending from the eighth to the eleventh week, may be termed properly the period of abortion; the 2d, reaching from the fifth to the seventh month, the period of premature delivery.

IV. The former deserves particular attention; for at this period the symptoms of pregnancy being not so decided as to establish absolutely its presence, it often arises from the want of attention to herself on the part of the patient; or from the prescriptions of the physician, for accidental disorders then common, not suspecting this state. All women who have already borne children consider with justice this period of early gestation as critical, while the occurrence of this accident, independent of its present effects, establishes a habit difficult to be got the better of. The more early abortions are, the less danger there is from their consequences. They are more liable to occur early in a first pregnancy than in any other, for the uterus is then less passive to its distension, while the patient herself, not suspecting pregnancy, pays little regard to her real state, and the too frequent indulgences of the husband excite also the action of the uterus, naturally disposed to throw off its contents, and thus abortion ensues.

V. The progress of exclusion in abortions, as well as their appearance, is very various, requiring a good deal of experience to form a just prognostic. One should, indeed, be a little cautious on this head, for, though symptoms of abortion are present, they are not in every case attended with the expulsion of the ovum. A flooding may continue, even in considerable quantity, for some time, and yet the foetus be carried to the term of gestation. Nay, the prognosis is more favourable where it is preceded by flooding than where no other symptoms but the occurrence of regular pains marks its approach: for, in the former, though the placenta be partly detached, yet the life of the ovum may still remain; but in the latter the ovum has generally some time before

lost its vitality, while the uterus, ceasing to distend, or losing that state kept up by the stimulus of a living principle acting against it, is excited in order to expel its contents. In very torpid habits abortions are often retained before this takes place for months.

VI. But abortion at a very early period is often mistaken for a mere increased flow of the menses. This is very ready to happen in women who feel always pain on menstruation. We judge however of abortion by the woman having missed the former usual period, by some symptoms of gestation having preceded, and by the present flow being irregular in its occurrence, and, if departing, returning soon. From the appearance, indeed, of what is past at this very early period, we may be deceived. The ovum is then so small as to resemble merely a clot of blood; and many women, especially those who are weak and relaxed, in whom the uterus does not possess much action, void the menses commonly in the form of clots. The same happens to women on the departure of the menses; when, if they are anxious to have children, they generally suppose they have miscarried, from the appearance of the menses voided in this form. Hence, from the difficulty of distinguishing the difference from external appearance, authors have confounded all very early abortions under the general appellation of False Conceptions, or Moles.

VII. All abortions from an external cause are very quickly expelled: those from an internal one are slower in their progress. Hence, from this circumstance, authors have attempted to determine the nature of their cause. They observe, that in these cases, where it arises from some fault existing in the habit of the patient, it

is generally slow ; a slight appearance of blood first takes place, which goes off, or returns at intervals but in small quantity, proportioned to the enlargement of the uterus. Stomach complaints next occur, such as mark incipient pregnancy, continuing often for the space of a month without any further morbid appearances. Pains, however, at last unexpectedly occur, and the appearance of blood returning in greater quantity than before, the os tincæ comes to be affected, and the stages of labour to proceed, when the fœtus is generally excluded in a putrid state.

Where this accident frequently occurs, and always at a certain period, which the female in no pregnancy exceeds, it depends on some local affection of the uterus itself, independent of the habit ;—this is more difficult to be remedied. But diseases of the uterus less commonly occur during the period of child-bearing and conception, therefore is less frequently blasted by rooted and constitutional, than by accidental and temporary causes. It is only, indeed, where improper means have been employed to accomplish former deliveries, that local affections, acting as causes of abortion, are induced.

VIII. No causes produce so frequently abortion as passions of mind. The passions have been divided into the exciting and depressing. The former act immediately, occasioning a rapid increase of circulation to the uterus, and loosening, by a rupture of some vessels, the connection between it and the ovum. Hence abortion frequently follows anger in the space of a few hours, or even a shorter period. The depressing passions are slower in their operation, and act only by increasing, to a violent degree, the natural complaints of pregnancy. Thus grief, by increasing that debility of stomach which

attends pregnancy, occasions the efforts of reaching to be frequently so violent, as to terminate by this accident.

IX. Another cause of abortion enumerated, which is too little attended to, is irritability of the uterus itself. It chiefly occurs in nervous debilitated women, where the pelvis is well formed, and the uterus does not rise sufficiently, after conception, to be supported. In them, the slightest accident, occasioning a sudden pressure of its contents against the os tincæ, is attended with this consequence. Thus even the motion of a carriage, in some women, is sufficient to produce abortion; slipping the step of a stair, the most simple purgative medicine, and a thousand other trifling causes, will be equally powerful; while we know that, in an opposite state of the uterus, the most powerful means of confining the organ by tight lacing, and employing at the same time violent motion, as stepping suddenly from a height, or even the use of the most powerful draughts, in those who wish for abortion, is not attended with the desired effect.

X. A variety of causes of abortion we find enumerated by authors, which are barely within the reach of probability. Thus Dr. SMELLIE mentions, that knots on the umbilical cord, or circumvolutions of it round the fœtus in early gestation, by interrupting the circulation, and depriving it of nourishment, may occasion the child's death, and consequent abortion. But in no case, when these accidents occur, can the knots be ever so tight as to obstruct the circulation; and the very interposition of the gelatinous matter itself, in the composition of the cord, seems by nature intended to prevent this effect.

In this opinion, Dr. SMELLIE is followed by several succeeding writers, who remark, as another cause of abortion, schirrosity of the placenta. Schirrosity, however, never happens at an early period; and where it is sometimes discovered on its extraction after the delivery of the mature fœtus, the latter is equally strong and vigorous as any other child, which plainly shews there has been no interruption of circulation.

XI. The appearance of abortions, on their expulsion, are very various. At times they are very regular, and answer, in their shape, to the natural triangular cavity of the uterus. In general, however, except at the very early periods, they are not excluded completely, but resemble a thickened bag, the parts of which cannot be ascertained. Frequently the fœtus and waters, with the lower part, is expelled; while the placenta, with the great bulk of the ovum, is retained. Till the sixth week, in examining any ovum on its expulsion, you cannot perceive the smallest vestige of the fœtus; and even then, from its delicacy, it is liable to be crushed in the passage, or dissolved in the very fluids, when any pressure is applied. Neither can you, from the time of its retention in the uterus, judge of its age; as when the abortion proceeds from an internal cause, it is frequently retained for months after the extinction of the circulation, till the uterus is excited to action for its expulsion. Where, indeed, pregnancy has been somewhat advanced, and the motion of the fœtus felt, we are determined in our opinion by the feelings of the patient herself, or the time when she felt the motion of the fœtus cease, previous to which there often takes place a violent stirring, which is never again renewed; and the

putrid state in which it is expelled shews its having been retained some time.

XII. It has been a common observation, that a woman suffers more from one abortion than from several labours. This depends, chiefly, on the state of the organ being unfavourable for the expulsion of its contents, and from the constitution therefore suffering by the continuance of its action before this is effected.

XIII. The difficulties arising from this state of the organ may be reduced to three circumstances :

1. The state of the uterine neck and orifice, which possess much of their natural elongated form, and, at this period, have received little or no dilatation.

2. The small force of the ovum itself, which does not possess sufficient pressure, compared with the bony cranium of the foetus at full time.

3. The more firm attachment of the placenta, which, though separated in part, adheres always more strongly by some points than what it does where the connexion is weakened by the full extension of the uterus at the end of gestation.

XIV. Having thus considered the history of abortion, it is proper to examine next its particular management ; or,

1. What methods may be employed, where symptoms arise, to prevent its occurrence ; and,

2. When this cannot be accomplished, what assistance is to be given to cut short the process by favouring expulsion.

XV. Wherever symptoms of abortion occur, the first step is to attempt getting acquainted with the particular cause from which it arises. This is, however, at times difficult. Where it arises from passions of mind, the effect of domestic concerns, you can only judge from appearances; but an account of the previous health of the patient will, for the most part, determine it when from an external cause.

XVI. For the management, then, of abortion, two indications naturally present.

1. To subdue the increased action of the organ itself; and

2. To moderate any unusual increase of determination to it, either originally exciting, or only increasing this state.

XVII. The former is immediately to be had recourse to, and is affected by,

1. Posture, that being preferred which occasions the least pressure of the uterine contents, beginning to be detached on the os tinæ; and hence the breech should be raised as high as possible, and the head, on the contrary, placed low.

2. And more powerfully by opiate glysters; and, the intestines being previously cleared, they should be exhibited in a full dose at once, and repeated as indicated by an increase of symptoms.

XVIII. The second indication or the lessening the increased determination to the uterus is performed by diminishing the force of the general circulation, and by

weakening the action of the contiguous parts affecting the uterus.

XIX. The force of the general circulation is diminished by either blood-letting, which is most effectual, or exposure to cold air.

In the use of blood-letting, to prevent abortion, a good deal of judgment is required. The increase of circulation we find of two kinds, the former of which may be termed primary, being the effect of the state of the nervous-system induced by the morbid cause, and producing an action of the uterus merely as a consequence. This generally attends abortions from an external cause: the other again is symptomatic, and arises from the action of the uterus itself. In the former case blood-letting early had recourse to, before the detachment of the ovum is considerable, has certainly prevented abortion, though unless early employed it cannot be effectual. In the latter this operation is highly improper, as the cause of abortion depends on the uterus itself; and therefore the success of general bleeding cannot be trusted; while, if abortion takes place, the debility induced by previous venesection, added to the attendant hæmorrhage, must prove very hurtful to the constitution of the patient; and hence in modern practice the use of venesection in abortion is become very much limited.

A free exposure to cold air is here particularly indicated by the hæmorrhage: the degree of it, however, must be regulated by the judgment of the practitioner.

XX. The weakening the action of contiguous parts af-

fecting the uterus forms the second part of this indication; and those parts are, chiefly, the abdominal muscles, the bladder of urine, and rectum.

The action of the abdominal muscles we endeavour to repress by cold applications, as cloths dipt in vinegar and water, attention to their relaxation by the posture formerly enjoined, &c. while retention of urine is carefully avoided, and any necessity for going to stool hindered by the most abstemious diet.

XXI. This, then, is the management to be enjoined to prevent abortion, when threatened; but this accident is not easily prevented when the symptoms of it once commence, and where they seem to increase by the pains, at first slight and irregular, becoming more periodical, stronger, and forcing, while the hæmorrhage at the same time displays itself in greater quantity. We next consider, as there are little hopes of its prevention, what assistance can be given to facilitate its expulsion.

XXII. In cases of early abortion, little can be done, and it is improper therefore to examine, as it conveys to the patient an idea of your giving some assistance towards the expulsion, which if she does not find take place, and an increasing pain and hæmorrhage after examination, it is apt to convey an unfavourable impression of your abilities. All therefore that should be done is to inspect often, and carefully the cloths, as they come from the patient; for the fœtus being then so small, comes frequently off in a clot of blood. The abatement of the flooding is no certain sign of the ovum being past, as on descending to the os tincæ, it plugs it up; and the latter forming a resistance, it is there detained, preventing the appearance of further hæmorrhage.

In these cases, if the hæmorrhage stops, and the pains still continue, we may expect the ovum in this situation, and by introducing the finger, and rolling it round the os tincæ, we may somewhat assist the dilatation; but violence must never at this period be employed.

XXIII. The size of the ovum about the third month, it was formerly remarked, equals a goose's egg; and in the progress to abortion, when the pains are regular, the os tincæ, on examination, may be felt somewhat open, and the ovum laying over it. If then the finger can be pushed a little within the os tincæ, an attempt is to be made to thrust it through the substance of the ovum; by which its fluid being evacuated, the bag will be lessened, and the uterus thus allowed to contract more, by which the flooding will in part be lessened. This is always to be attempted where the flooding is alarming; and even in this case, if no part of the ovum should be felt, an attempt is to be made to dilate the os tincæ, by rolling the finger round it, and thus bring it within reach, when, piercing the bag, the discharge of its contents may take place.

XXIV. But instead of this practice, many authors advise, as the parts are so confined as to prevent the finger getting up sufficiently high within the uterine orifice in order to give the proposed assistance, that a pair of long forceps should be introduced, guided by the finger within the orifice, when, grasping the presenting part between their blades, it will be easily extracted.

But in the first place there is an objection to all instruments where they can possibly be avoided, and particularly at this early period, when the women themselves have an idea of nature finishing the delivery completely herself.

2. You cannot trust any instrument when it is beyond the reach of your finger, and within the cavity of the uterus, as you are uncertain of what particular part it takes hold; and,

3. In employing the finger for the extraction, you can in some measure imitate nature in the separation of the ovum, and excite the action of the uterus itself to assist, while, in using an instrument; you are obliged to employ violence at once, without attention to any circumstances of the situation of the ovum. The period when the present means recommended to assist the expulsion will be found necessary, is from the third to the end of the fifth month.

XXV. As gestation becomes more advanced, and the different parts of the ovum completely evolved, though there is little difficulty attending the expulsion of the foetus itself, yet the placenta being retained, the discharge and other symptoms of uneasiness are still kept up. The uterus also does not then admit the hand to assist its delivery; nor, from the slenderness of the cord, can any force be employed to hasten it. This process, therefore, is generally left to nature; and before it takes place, a considerable time often, several weeks, nay, upwards of a month, will at times pass. This is more liable to occur where abortion is the effect of fever, as the general inflammatory state of system is in some degree communicated to the uterus, and a more firm adhesion than natural kept up. It happens also more frequently where abortion occurs in a first pregnancy, or where the woman is advanced in life, and the neck of the uterus possesses much rigidity. In these cases the expulsion of the placenta takes place, either

1. By an increased effort of the uterus some time after

the expulsion of the fœtus; for on the delivery of the latter the discharge becomes generally greatly lessened, or assumes a serous appearance; and this increased effort of the uterus, which is marked by the occurrence of fresh pains and a considerable discharge, is often brought on by the pressure at stool; and hence the practice recommended, of exciting the uterine action by repeated glysters, though if not affectual, they are liable to increase the flooding for a time; or

2. By the tedious process of suppuration: and this event we judge of from the discharge acquiring an offensive smell, and before it fully takes place, or, when commencing, by its assuming the colour of coffee-grounds.

XXVI. In this last case very particular attention must be paid to the state of the discharge. From the debility induced by abortion, similar to the real child-bed state, there is always a tendency here to gangrene; and by neglect of cleanliness, or allowing the discharge to induce inflammation in the passage, this will certainly occur. On this account the vagina should be kept clean by frequent bathing, and the injection carried even, if possible, to the uterus, which will assist the separation of those pieces of placenta already in a state of actual suppuration. If, however, gangrene is about to commence, and this may be judged of from fixt pain, similar to that attending inflammation, and not of that pressing kind which marks the action of the uterus in delivery, the bark in every form is to be liberally employed, and joined to the former treatment, every mean of preventing the danger that threatens being had recourse to.

As soon as suppuration takes place, the discharge is

no longer troublesome, the inflamed state of the uterus sealing up the orifices of the vessels; and in any future delivery, where this termination of abortion has taken place, adhesions of the placenta may be always suspected.

XXVII. Every case of abortion endangers a repetition of it in succeeding gestations; and the management, therefore, of the accoucheur, so as to avoid it, becomes a necessary part of attention. The first step for this purpose is to ascertain the cause from which it proceeds. This, however, is often difficult; and, in spite of all your precautions, a woman will often continue to miscarry; so that you will be at a loss what plan to direct.

Where a woman miscarries, with great regularity, at stated periods, it is either owing to a constitutional fault, or a state of the organ unfavourable to distension.

With respect to the former, you may often trace it to a venereal taint. A slight use of mercury may therefore be tried, and it will often succeed.

With regard to the latter, we find in many women that the fundus uteri does not readily distend, which, producing a premature inclination of the uterine contents to the neck, occasions the latter to be too easily dilated. In this case, as soon as the patient is sensibly with child, she should be constantly confined to bed till after the abortive period, and a spare diet in the interim recommended.

Where miscarriage occurs in the more robust and

plethoric, it is rather accidental; and if attention is paid to the patient in the next pregnancy, it will not likely recur.

In women subject to menorrhagia, or fluor albus, in the unimpregnated state, when miscarriage occurs, the obviating relaxation in succeeding pregnancy is clearly pointed out; and it is in these cases the effects of cold-bathing, as recommended by the experience of Mr. WHITE, have been found so successful.

FLOODING.

Connected with abortion, and one of its leading symptoms, is *flooding* in the pregnant state, or a discharge of blood from the uterus. From reviewing the sentiments of authors, two species of it come to be established; the one very rare, and corresponding both in regularity of period, and in quantity to the natural discharge; the other morbid, and marked by a train of symptoms, which point it out as a deviation from the healthy state.

XXVIII. The former of these has been mentioned as occurring at the usual period of menstruation, for two or three times, or longer, after conception, without any symptoms which shew a tendency to abortion, or lead us to consider it in a morbid light. Its occurrence is supported by many respectable authorities, though it is by no means frequent; nor can it proceed from the same source from which the menses naturally flow. In every case, therefore, of hæmorrhage during pregnancy,

where a woman has formerly had children, and this species has not taken place, marking a certain peculiarity of constitution, it may be considered as morbid; or the probability is, by its observing the usual period, that the woman has not conceived. Some authors have even endeavoured to distinguish these different species by the appearance of the discharge; for in common menstruation the fluid appears thin, while in the morbid, on the contrary, it is thick, and possesses a strong tendency to coagulate.

XXIX. The latter, which properly characterises pregnancy, is of a morbid nature, and is always considered by practitioners as an alarming symptom; for if not dangerous of itself, it at least threatens a premature exclusion of the ovum, and consequently destroys the effect of conception. From the slight attachment of the ovum to the uterus in the early months, it is not surprising that such an effect should take place from the slightest causes, when we consider the quantity evacuated at every period, and the size of the vessels from which it proceeds. The false chorion is the original connecting membrane between the uterus and its contents; and the least separation of this, by exposing the orifices of the menstrual vessels, must be attended with such a discharge.

XXX. Flooding arises from the same causes formerly enumerated as inducing abortion; but the same causes, which are sufficient to induce flooding, do not always occasion abortion. The symptoms which attend it are pretty similar to those of abortion. It begins with slight rigour, attended with a sense of lassitude and pain, which is succeeded by a weight in the uterus and pu-

denda. The discharge itself soon appears,—moderate, for the most part, at first, and soon departing, but returning in a little time with increased violence.

XXXI. The great point, in all cases of flooding, is for an accoucheur to be able to form a just prognosis with respect to their nature. Rules will not instruct us in this. It is only experience, and the opportunity of frequently observing such accidents in pregnancy, so as to be able to draw an opinion from comparison. With a view however to this, floodings may be divided into two kinds; either,

1. With respect to their real danger, as threatening the life of the patient; or,
2. With regard to pregnancy alone, as endangering abortion.

XXXII. Till the fifth month, authors have asserted there is little danger from such accidents in the pregnant state. There have been instances, however, of flooding proving fatal at an earlier period; but, in general, we find the remark well founded; and in such early cases they must have been complicated with some morbid circumstances not attended to, or on which their fatality more justly depended: even the practice formerly employed, of forcibly bringing off the placenta of early abortions by draffics and other modes of irritation, must have very much contributed to such a fatal effect.

But after the fifth month, every appearance of blood from the uterus is to be considered as attended with danger; and though departing, and apparently got the better of, it is very liable, on the slightest misconduct,

to suffer a relapse. Many women are subject to flooding in every pregnancy, and it marks in them a particular lax state of the uterus, which generally proves fatal at last.

XXXIII. Whenever a flooding is attended with regular uterine pain, however slight, and the second appearance of it, or the return after the first discharge, is not soon checked, it must, by detaching the decidua from the surface of the uterus, end at last in abortion; and this will be more certain if any filamentous membrane appears in the discharge. The alleviation, however, of this symptom we must aim at, and the same remedies are to be had recourse to here as in case of abortion.

XXXIV. The ingenious Count de BUFFON has observed, that during pregnancy, though for the most part the menses do not appear, yet the usual effort is continued at each successive period. To avoid flooding, therefore, particular attention should be paid to the returns of this period, and this tendency of the uterus to action counteracted by rest and other means.

False Conception.

XXXV. Connected with flooding, and which used to be treated by the earlier writers at considerable length, is the mole or false conception.

Every ovum excluded in the early months, when the foetus was yet so small as hardly to bear detection, received this appellation, in which practitioners were

confirmed by its possessing the appearance of an irregular fleshy mass, being generally crushed more or less in its exclusion, so as greatly to disfigure its form. By a mole, however, is properly understood an extraneous body formed in the uterus, from the retention of the discharge peculiar to the organ, receiving a form similar to the cavity containing it, but without any firmness of organisation, or regular texture.

XXXVI. Such a disease is apt to occur on the departure of the menses in those women who are much subject to profluvia; for the action of the organ being impaired, and the discharge accumulating in its cavity, receives, from the pressure of the uterus, a form somewhat resembling in its appearance the organised structure of the ovum.

XXXVII. No peculiar symptoms distinguish this disease from real pregnancy; and, in its treatment, manual assistance is only required when the excess of flooding, attending its evacuation, endangers the life of the patient.

BOOK III.

PARTURITION.

I. **P**ARTURITION, or labour, is distinguished by the following symptoms:—pain of the uterine region, recurring at intervals of uncertain duration, and producing always pressure downwards: on examination, affecting more or less the os tincæ, with an increase of the pulse, and disorder of some functions during their continuance.

II. From this definition of labour, uterine pain appears its leading characteristic; but towards the term of gestation every uneasiness in the hypogastric region is considered, by women themselves, as the commencement of this state: to form a proper judgment, therefore, certain circumstances are to be remarked, conjoined with the symptoms above described.

III. The first of these is, that the term of gestation be completely elapsed; for in this a very great regularity prevails; and without some extraordinary cause women are seldom delivered till this period arrives.

The second is, the effect of this uterine pain on the organ itself, which is displayed,

1. By the orifice beginning to dilate, or feeling in a

soft slippery state, while a thick mucus, tinged with blood, oozes from the glands at the neck of its cavity.

2. By its nature being regular, periodical, and bringing into action the abdominal muscles.

IV. The true diagnostics of labour-pains come to be, the state of the uterine orifice as affected by their pressure, their regularity, and intermission.

V. As pain then forms the leading characteristic of labour, it must be considered, in the human subject, as a state of disease, which is established both by the feelings of the sex themselves under it, and also by its comparative difficulty with that of the brute creation.

VI. This difficulty has given occasion to a division of labour into certain classes or kinds, according to the morbid circumstances with which it is complicated; and from observation of these, without adopting the plan of former authors, which we consider as not sufficiently extended, all labours we distinguish into five classes, by the names of the *natural*, *protracted*, *instrumental*, *manual*, and *anomalous*.

CLASS I.—Of *Natural Labour*.

VII. Natural labour, or those of the first class, are marked by the following appearances:

The os tincæ feeling, on examination, soft and mucous, with its edges thin, and readily yielding to the in-

cumbent pressure of the foetal head, the pains recurring at regular intervals, gradually shortening, and the different containing parts forming no morbid resistance to the passage of the presenting part, while its duration seldom exceeds six hours.

VIII. But though labours, from the foregoing division (VI.), differ materially from each other in the nature and variety of the circumstances attending them, yet certain leading circumstances we consider as proper to every labour; and the ascertaining these is essential, in order to understand the variety taking place. Such circumstances we find occur in the progress or steps of a natural labour as it is most commonly formed; and the phenomena observed in it are to be studied, as explaining the general doctrine of parturition.

IX. The appearances marking the progress of such a labour are:—The patient first complains of some degree of cold or chilliness. Slight pain next succeeds from the small of the back, and strikes forwards towards the pubes, on each side, meeting as it were in a point, or down to the thighs. An increased discharge of mucus from the vagina next appears, streaked commonly with a few drops of blood. The pains proceed, increasing gradually in frequency and strength, the intervals become shorter, and their pressure downwards augments in proportion. The os uteri, on examination, is felt somewhat open, with its edges thin, soft, and yielding. The opening, at first small, is hardly perceptible during the interval of pain, but soon extends; when, on the finger being introduced within it, there is felt a small distended bag pressing against the orifice. This body gradually enlarging at each pain, soon fills the os uteri, and continues its

pressure against it for so long as the edges of the orifice give it a support. At first, when small, its figure is rather conical. As the orifice enlarges, and it comes to fill it, it becomes of a more rounded form. In the absence of pain it feels soft and flaccid, and the uterine orifice, if possessing much elasticity, becomes also, in the interval, a little more contracted. By the force of pain continuing, the dilatation of the orifice proceeds, so that its edges are obliterated; the coats of the body, or bag, being unsupported, at last give way, and the evacuation of the fluid contained, or at least of the greater part, takes place. The quantity varies according to the portion contained in the uterus, and according, also, as the head accurately fills up the passage, preventing its exit. On the evacuation of the waters, the head, the presenting part, is distinctly felt, and a cessation of pain, for a short period, generally succeeds. The uterus then resumes its contraction with increased force, proportioned to the greater resistance from the bony cavity, which the head now fills, compared with the soft dilatable state of the *ostinæ*, and it comes, by accommodating itself in its passage to the difference of shape in the cavity of the pelvis, to be gradually propelled against the soft external parts. Its vertex then rises from under the arch of the pubes, by which the resistance from the pelvis, or bony cavity, is taken off, and the bulk of the head fills up the yielding parts that form the perinæum. In this manner, the head advancing in its progress with every pain, comes at last, on the yielding of the sphincter, to be immediately expelled; and a cessation of pain then ensuing for a few seconds, the uterus resumes its action, and the shoulders and body pursue the same direction with the head, when the child is completely delivered.

X. From this series of appearances every labour may be properly divided in its progress into three stages, which we distinguish by the names of the period of *ar-cession*, *dilatation*, and *expulsion*.

In the course of each of these, various circumstances arise, which deserve to be more particularly mentioned.

XI. Under the first stage is included that period from the first symptoms of uneasiness till the os uteri is felt sensibly to dilate. In this stage a greater variety is observable in its symptoms than in the two others; and that both in different women, and in the same woman in different pregnancies. It generally commences with a chilliness, or sense of cold. In some this rises to a regular cold fit, or trembling, similar to what is felt in a tertian. In these cases no pain ensues till the violence of the trembling abates. In others it is accompanied with cholic, diarrhoea, or some particular abdominal complaint, to which the patient is usually subject, and of which she experiences then a slight attack. Sometimes it begins also where the uterus falls low, about the end of gestation, with a difficulty in the discharge of urine. Where this complaint then occurs, and the patient feels also a sort of relaxation or freedom about the stomach, and parts adjacent, labour may always be considered as at hand.

XII. This stage seems a necessary prelude to the rest of the operation; for, during it, the connection between the uterus and placenta is in part loosened. The vessels of the decidua, connecting the ovum or bag to the uterus, are also gradually ruptured, and thus every part is prepared for the approaching exclusion; for, in every labour, we are to consider, that thousands of vessels along

its surface are lacerated, and an evident destruction of organisation produced, so that the organ is left in a raw inflamed state, which, on any cause of irritation being applied after delivery, is liable to have a sensible effect on it. Hence there is, perhaps, more propriety, than modern practitioners seem now to think necessary, in the attention formerly paid to the state of the discharge after delivery, and those other circumstances marking the particular disposition of the organ at this period.

XIII. The duration of this stage is very uncertain: in most women it lasts only a few minutes. In some, particularly those of a tense solid, and in a first labour, where the under part of the uterus is not so completely dilated as afterwards, it has been known to last several days; the pains at the same time being as strong as those of the second stage, and bringing the uterus low into the pelvis, without having the smallest effect on the orifice, even the discharge from it not taking place.

XIV. The pains of this stage are marked in general more by a grinding, or constant sense of uneasiness, than much pressure. Hence the difficulty of distinguishing labour, during this period, till the second stage properly commences.

Correspondent to this state of pain, the patient, during this stage, seems fretful, uneasy, and cannot even express her feelings. And the pulse, from the apprehension of the impending danger, is frequently somewhat fluttered; but, when the second stage takes place, the pulse becomes fuller, and during the pressure of the pains is considerably increased, acquiring often a good deal of sharpness,

XV. These are the chief circumstances that mark the stage of accession. The second commences from the time that the pains, observing a regular recurrence, shew a sensible effect in dilating the uterine orifice, and terminate when its edges are obliterated, as marked by the rupture of the membranes : and we know it to have taken place by the waters beginning to form at the os uteri. The progress of dilatation is at first very slow. As the orifice enlarges, however, its edges become gradually thinner, and more yielding ; and, in proportion also as it admits a greater proportion of the bag, or distending power, the contractions of the uterus are stronger. In this stage, and before the rupture of the membranes, the throes are never so painful as where the body of the child, on their evacuation, comes in contact with the surface of the uterus ; which displays one intention of the waters, to prevent violence of pain at an early period of labour, before the fibres of the uterus are somewhat habituated to irritation. Hence we find inflammation succeed most commonly tedious labours, where they have been prematurely ruptured.

XVI. The rupture of the membranes marks the completion of the second stage, in general, or takes place on the full dilatation of the uterine orifice. But, in certain instances, they continue entire even longer, and the whole ovum has been expelled at the full term of gestation complete. This many authors have considered as the most natural state of labour ; but it is by no means to be wished for, as flooding, the most alarming circumstance in parturition, is thus endangered. What happens most frequently we are to consider as always the most natural state.

XVII. The nature of the pains themselves have also an influence on the rupture of the membranes. Where they commence very strong at first they are frequently prematurely ruptured; but where the labour is slow and gradual they continue long entire. When ruptured prematurely, the fluid continues to come off in small quantity at every pain.

XVIII. Before their rupture the figure of the membranes is more or less rounded, answering to the circular form of the os tincæ; but, where any obstruction to the dilatation of the os tincæ prevails, it assumes different shapes, which are considered by accoucheurs as giving evidence of the nature of the labour, or the particular part which presents.

XIX. When the waters first form, the presenting part comes to be retracted a little in the absence of every pain. As the bag enlarges, however, it becomes gradually more fixt, and there is then more danger of rupturing them prematurely by touching. At this time a considerable pain is often felt behind, or about the top of the sacrum, which inclines the patient, in the absence of the real uterine throes, to bear downwards. This, however, should be suppressed as much as possible, for it has no effect to forward the labour; and, if the latter should be protracted, it tends to exhaust the patient by fruitless exertions.

XX. As soon as the presenting part becomes fixt the pains become strong and settled; the former inquietudes of the patient depart; while, in the interval, the period of ease is more enjoyed, and the resolution begins to be more confirmed. As this period advances,

or towards the termination of the stage, when the membranes are about to be ruptured, the uterine efforts are so uncommonly severe as to affect every part of the system. The face becomes considerably flushed, the eyes are inflamed, and a general increased heat, and quickened circulation, visibly take place. The rupture of the membranes alleviates this state, and is perhaps necessary to prevent the danger of any morbid effects from its continuance.

XXI. After the rupture of the membranes, when the action of the uterus is resumed, the third stage of labour, or what may be termed properly the stage of expulsion, commences. The period when this action is resumed is very different in different cases. In some it proceeds almost instantly, and the uterine action continues regular, without any intermission, till the head is expelled: in others, and most commonly, there is a considerable suspension of pain. But, whenever the membranes break, the head generally fills up, more or less, the vagina, and the uterine orifice is retracted beyond the feel. If the space is not confined, it presses then, in a few minutes, against the perinæum, and the duration of the labour now depends very much on the resistance from the external parts; for the two points of resistance in this stage are, the protuberances of the ischia, or sphincter of the externum. As the perinæum yields, the tumour of the external parts begins to form, and the occiput, rising from under the arch of the pubes, begins to shew itself during the pressure of pain without the pudendum. When, however, the perinæum is rigid, or possesses much elasticity, though apparently at the os externum, during the pressure of pain, it becomes again retracted within the vagina on its departure; and in this

way the labour will often continue to proceed for several hours after the rupture of the membranes. This is one of the most painful states that can well be imagined for the patient; but it is not in general attended with danger, as a laceration of the perinæum is thus prevented, an accident which often happens in a first labour, though natural. But the parts, though long prest on by the head, are not very liable to suffer inflammation, unless when fretted by the attempts of the operator.

XXII. When the head, as it fills the vagina, in this third stage, is rather large, from its pressure on the sacrum, and nerves connected with it, cramps of the thigh arise. These are troublesome, but seldom particularly attended to by the accoucheur, any further than as they convey to him some idea of the progress of the labour. Soon after this also, from the same pressure on the rectum, many women feel a desire to go to stool. At this time, however, it is unsafe to indulge it, as the child may be born in this situation, which has frequently happened in the hands of midwives. It is very liable to occur in protracted labour, where the head, fixt on some projecting point, has remained many hours without any sensible advance; for, by this change of position, and the efforts then employed, if the obstacle is overcome, it is at once expelled, when least expected from appearances.

XXIII. When the labour has proceeded to this length, of affecting the thigh and rectum by the pressure of the head, it comes soon to push out the external parts, and in a pain or two at most is expelled.

XXIV. The different changes in the posture of the head, in its passage to expulsion, do not affect the re-

maining parts of the body ; and time is therefore to be allowed for them to make the same necessary turns. This generally takes place in a few minutes ; and by the occurrence of fresh pains, the child being completely delivered, the most important part of the labour is finished.

XXV. From the history of labour delivered (from IX. to XVIII.) we proceed to make some steps towards ascertaining its theory. - As yet it has eluded the research of physiologists ; or rather, all its circumstances have not been explained with satisfaction ; and we shall not therefore pretend to offer an explanation that will universally apply.

XXVI. In entering upon this subject, it is proper to remark the comparative difficulty that takes place in human labour, contrasted with that of the brute creation. This arises from the particular posture of the human subject, and the manner in which the foetus must necessarily be carried, during gestation ; for here these very circumstances, which are essential to the safety of gestation, prove the very cause of impediment to the ease of delivery.

XXVII. These circumstances are a constant state of the parts concerned, opposing the descent of the uterine contents, and that either from

1. Their form ; or,
2. Their natural action.

XXVIII. Thus, with regard to the former, we observe that the brim of the pelvis, from the expansion of the alæ of the innominata, affords a ready support to the uterus ; while, by slipping forwards, it gives it a tenden-

cy rather to be thrown upon the pubes, than to enter the hollow of the pelvis; and the parts covering the abdomen yield at the same time readily to its pressure directed this way, and are capable of suffering very great extension, without being brought into powerful action.

The capacity of the pelvis again has its axis not in a line with the external opening of the parts. It is furnished also with a number of projecting points, which, should the uterus possess a tendency to gravitate downwards, would prevent, without the addition of other more powerful assistance, the occurrence of labour, while the natural proportions betwixt the pelvis and head are such, that it can only enter it in one direction,—a circumstance not remarkable in other animals, for that nice adjustment betwixt the dimensions of the pelvis and head is in them no way remarkable. Hence, in human parturition, there prevails a variety of circumstances, which render it a more complicated situation than in the quadruped.

XXIX. With respect to the second circumstance, or natural action of the parts, we find the very exit of the uterine contents opposed by the structure, as well as mode of action of the organ itself.

The uterus is commonly divided into three parts, the body, the neck, and orifice.

From the body, or fundus, the fibres run in a longitudinal direction towards the neck, similar to what occurs in the bladder of urine, and other hollow organs of a similar structure; and the neck therefore may be considered as a fixed point, to which, when contracting,

their action tends. The fibres of the neck, again, are placed transversely, so that their action is in opposition to that of the fundus, which they naturally resist; and the orifice is, in its structure, similar to the neck; being however more acutely sensible, so as, on any strong irritation applied to it, to bring into action all the other parts.

XXX. To apply this, then, to explain the theory of labour, we observe that, during the whole of pregnancy, the uterus itself seems to possess a state of diminished irritability, remaining entirely passive; and this passive state is only removed on its acquiring a certain degree of ultimate extension.

XXXI. That such a state prevails during pregnancy, appears,

1. From the symptoms immediately succeeding conception; as, lowness, languor, and want of venereal appetite.

2. From the impulse of the menses, &c. at their next period having so little effect for it, is not owing to the adhesion of its contents preventing the discharge, but that the state of the uterus itself is somewhat altered, is confirmed by what was formerly remarked on its increase, in cases of extra-uterine conception, even though its proper contents adhered to the cavity of the abdomen.

XXXII. After these observations, in order to elucidate the theory of labour, the peculiar manner in which the extension of the uterus takes place requires to be considered; and this we find to proceed in the following manner. The structure of the fundus differs from that of the neck, in its fibres being naturally

more loose and extensive, while those of the neck possess a density of texture resisting extension, in proportion to its lessened size, compared with that of the fundus. From this structure the uterine contents are chiefly confined to the fundus, till the latter admitting no longer an easy extension, the fibres of the neck begin to be dilated. When the dilatation of the neck has acquired the same degree of extension with the fundus, proportioned to its size, an equal balance takes place between them, and an increased irritability, rising soon to a morbid degree, is induced over the whole of the uterus.

XXXIII. That such a state of morbid irritability then occurs, we prove,

1. From the symptoms attending the first stage of labour, previous to the real uterine action; and,
2. From the state of the contiguous parts in the last months of gestation.

XXXIV. That a balance of extension also happens between the different parts of the uterus, giving a superior power to the fundus, is confirmed by the ease of natural labour, compared with what occurs at a premature period; and the greater the degree of extension the cervix acquires, in order to bring it to this balance with the fundus (for it takes place in a greater degree in some than in others), the sooner will the progress of labour be completed. Hence we conclude, that the state of the uterus itself, during the whole of gestation, forms even a resistance to the action of the contiguous assistant parts that are affected in delivery; and this being once taken away by the full extension of every part, labour comes to be un-

avoidably induced; and the causes which, during the period of gestation, we have seen unequal to this effect, then readily excite it to action.

XXXV. The period of gestation varies in different animals, and even some latitude prevails in individuals of the same species. The larger the animal is, the longer in general is the term of gestation.—Women go nine complete months, or from 270 to 273 days.—This may be considered as the medium; and the observations of Dr. RODERER on this subject established it as the proper time when labour may be expected. It is not to be denied, however, that women often exceed, and also at times fall a little short of this period. Thus many women are delivered in the eighth month, while the foetus has all the appearance of having arrived at full time: others again have been known to go beyond the usual term for some weeks; and women themselves generally remark that females remain longer in the uterus than males. This variety we should naturally expect to find, as the capacity of the uterus, and consequently its progress of extension, must differ a little in different subjects.

XXXVI. This variety we do not find prevail in other animals, who are much more regular in their terms of delivery; and as in the human subject it may be made a bad use of in cases of illicit commerce, accoucheurs have discouraged its being received as a general opinion. Law, however, has established such a latitude, that every child born twelve months from the death or absence of the husband is considered as legitimate. But to regulate our opinion on this head, it may be remarked, that in the same person a good deal of regularity prevails; and wherever a woman has had several children, and exceeds

at last the usual term, from the period of reckoning, it may be suspected she was not with child so early as she imagined.

XXXVII. The cause of this regularity of delivery at the end of the ninth month authors have been at a loss to explain; but the uterus, whatever the stature of body may be, we find in most women pretty much of the same size; and its contents, which determine the period of exclusion, or its ultimate extension, are remarked to be as large in small as in taller women. Even in cases of twins the same rule will hold, for the fundus is the part that receives the excess of extension, and the cervix and lower part never receive their alterations till near the usual time, as where there is but one: at least a great deal of difference does not take place.

XXXVIII. The causes which, at the term of gestation, by promoting the action of the uterus in its full extended state, induce labour, may be referred to several heads, and consist of—

1. The general unequal balance between the solids and fluids, distinguishing the whole of gestation.
2. Violent tension of neighbouring parts, giving a tendency to action.
3. Increased stimulus of the uterine contents.

XXXIX. In accounting for labour, authors have not included all the causes to which it is referable. They have generally contented themselves with one, and, while several were concerned, have admitted it only as acting in a primary manner. Hence they have attributed this operation to the action of the uterus at one time, and to

the efforts of the child at another. That several, however, are concerned, we have a sufficient proof from the phenomena of labour described, and we shall consider separately each of them enumerated.

XL. With respect to the first, or the unequal balance between the solids and the fluids, constituting more particularly a uterine plethōra, it has been strongly insisted on by the Count de BUFFON; but he has circumscribed its power of action to the recurrence of the menstrual period alone. Though no blood be exhibited from the uterus during pregnancy, yet the cause of the menses, he contends, is not destroyed, and a push is therefore made, as usual, at each successive period. This push occasions a tendency in the uterus to contract, which it resists till a certain degree of ultimate extension takes place, and then the menstrual effort becomes sufficient for inducing labour.

XLI. This theory Mr BUFFON supports,

1. By women themselves being sensible of this menstrual effort continuing during pregnancy.
2. From the variety in the term of gestation in the human subject, which does not take place in other animals: and, as they have no menses, he concludes labour in women must depend on this cause.

That the effort made at the menstrual period may have some effect is not to be denied; but were it the sole cause, labour should never take place but at the time one of these periodic revolutions recurred; and if the effort excited by this periodic revolution was insufficient, no action of the uterus should recur, or labour commence, till the return of the next revolution; but we find labour occur at all times, independent of the menstrual period.

The latter, therefore, cannot be the sole cause of parturition, though, when coinciding with the time of labour, it will certainly have considerable effect in exciting the action of the uterus, and comes therefore to be properly introduced as a cause.

XLII. That the second cause, or violent tension of neighbouring parts, has likewise some influence in inducing labour, is also proved from the accidental irritation of these parts during gestation, frequently occasioning its premature occurrence, and, from the power of their action, in assisting the expulsion of the child. Nay, even the very first symptoms of labour are frequently an affection of the neighbouring parts, and though, perhaps, not of itself sufficient to induce labour, yet, when concurring with the others specified (XLII.), it must be attended with considerable effect.

XLIII. The third set of causes to which the occurrence of labour is to be referred, consisting of the increased stimulus of the uterine contents themselves, has been the most general opinion received on this subject; and this increased stimulus arises from,

1. Decrease of the fluid, or liquor amnii, that lessens the action of the foetus upon the uterus; and,
2. Increase of motion on the part of the child.

XLIV. With respect to the first, we can perceive no other reason for the diminished quantity of waters which takes place towards the term of gestation.

The second is a fact sufficiently known to the mother herself,—the motions of the foetus in the last months becoming generally so strong as to give a good deal of un-

easiness, and threatening, according to her own idea, to rupture the sides of the abdomen. The cause of this increased action of the fœtus authors have endeavoured to explain in a variety of ways, some considering it to depend on the diminished capacity of the uterus, which, confining its situation, obliges it to exert every effort to break its prison; while others contend, that the weight of the fœtus, now insupportable to the uterus, occasions the latter opening to be discharged of its burden.

But, in opposition to these opinions, we may remark, that the uterus is never completely full; that, when loaded with two, it is more extended than with one; that the weight and size of children of eight months sometimes exceeds that of nine; and, as the period of delivery in all these cases is pretty nearly the same, it cannot arise from these causes.

XLV. Forsaking, then, these opinions, an attempt has next been made to account for it on the principle of certain functions being about this time necessary to be performed; and that, by a law of its economy, or a natural instinct, the motions of the fœtus are exerted to free itself from its situation. Thus GALEN pretends that the fœtus continues in the uterus till it is able to take nourishment by the mouth; and that the want of proper food makes it restless, and anxious to escape. On the same principle another party, who suppose the fœtus originally nourished by the mouth, contend, that in process of time the liquor amnii is so contaminated as to be unfit for the farther purposes of nourishment; and that the desire for the latter occasions the action of the fœtus to be excited. But these reasons, when duly considered, are by no means satisfactory: for, were this

the case, the more weakly children should remain longer in the uterus than the more robust, and nutriment we find not the first want of the child after birth. It often remains for some days before being capable of receiving it. Other anatomists have, with equal probability, referred this increased motion of the child towards the turn of gestation to a desire of being refreshed by respiration. As respiration, however, does not seem necessary to the foetal life, why suppose it sensible of its want; and if the placenta is capable for so long of producing a depuration of the foetal mass, some alteration must take place in it, and which we cannot perceive, by which it is incapable of longer executing this office equally well as before?

XLVI. An opinion suggested by DRELINCOURT may be also mentioned, that the collection of the meconium in the intestines produces, from its acrimony, an irritation, which, rendering the child uneasy, occasions its motions to be excited, that, leaving its situation, it may be freed of this collection in the intestines. But were this actually so, why may not the excrement be voided in the uterus? We know that any accidental pressure on the abdomen of the child in the uterus, where we have occasion to turn in manual or preternatural cases, forces the excrement at times to be past. Where a child dies in utero, the meconium too is frequently voided in its last struggles; and the appearance of it therefore, on the rupture of the membranes, is considered as one proof of the death of the child. Hence, if the child really felt an irritation from it, it could be easily past in the uterus.

XLVII. From examining the above theories, we are led

to conclude that authors have taken too contracted a view of the subject; and, without a desire for the performance of any one particular function, we are to consider this increased motion of the fœtus as depending on the fœtal life, being so far completed that its system is capable now of depending on itself; and, conscious of its vigour, an attempt is made by the fœtus, to exercise its different members as far as in its power, which in this irritable extended state of the uterus must certainly have some effect in exciting its action. But to suppose this motion of the fœtus is of itself capable of inducing labour is false; for we know that a dead child is delivered at the usual time with as much ease as a living one; though, misled by this theory, practitioners for long considered a dead child as only capable of being delivered by manual assistance. But though the fœtus, we have endeavoured to shew, is not the original cause of labour, yet there can be no doubt it has great effect in its progress in a mechanical way, so soon as the head comes to be engaged in the os uteri, and to act upon its irritable surface.

XLVIII. Having thus enumerated the several causes on which we conceive labour to depend, the theory to be formed of its process is simply this:

The united power of certain stimuli mentioned (from XXXVIII. to XLVII.), applied to the uterus in a state of morbid irritability, the effect of extreme extension, excites the action of its fundus, which overcomes the natural resistance of the neck in consequence of the latter having now received a degree of extension, putting them in balance; and the contents of the uterus are thus determined downwards, by which the orifice

begins to dilate. To render this dilatation more expeditious, the fluid surrounding the fœtus is first pushed down in a certain quantity, and, from its elasticity, admitted into the orifice, however small,—thus acting as a wedge before the head can possibly enter, while its irritation being slight, the orifice is not thrown into those spasms which frequently take place when it is irritable, and the waters break early, so that the head is applied at once against it.

XLIX. The action of the uterus in this process we find temporary, or continues only for a time, and then suffers an intermission. From the uneasiness attending it, it has received the appellation of labour pain, and authors have distinguished it into three species, which they term true, false, and mixed.

By the first, is understood that kind of pain which shews a sensible effect in bringing forward the fœtus to delivery.

By the second, that which affects only the contiguous parts, and does not at all excite the action of the uterus.

By the third, that which affects both the uterus and contiguous parts at the same time; though its effect on the former is not equal to the force it seems apparently to exert.

L. This pain, or temporary exertion of the uterus, may be explained on the principles of muscular action; for every muscle, after being a certain time in action, remits or becomes insensible to the same degree of stimulus. Hence we find the pains in their progress naturally increase in violence; for the presenting part, advancing gradually, produces a greater irritation on

the extremity of the muscle ; and hence also the intervals of pain are at first more distant, and become gradually shortened as the labour advances. The action of all hollow muscles too, when once excited, we find stronger than any other, as not being fixed to any part, and consequently having no limits to their contraction, which is even one reason for considering labour as depending so much on the action of the organ itself,—the causes which act during pregnancy, in opposing its contraction, being taken away.

LI. At first the efforts of the uterus are perhaps in some degree under the command of the will, and we even find that at this time they may be partly suspended, of which we have a strong proof when called to a patient, that they will often leave her entirely on our appearance, though regular and frequent before ; but, when the uterine action is once fully established and labour advanced, they are then involuntary, and cannot be suspended, which we find particularly the case in the last efforts, when, from their violence, the rupture of some of the parts frequently ensues.

LII. From these observations, then, on the action of the uterus, though its muscular substance has been considered by authors as less apparent, yet its power as a muscle is in labour sufficiently established ; and, if it is not muscular, it then shews that the power of contraction is not exclusively confined to that kind of organisation.

LIII. But though delivery depends chiefly on the action of the uterus itself, yet certain powers, termed assistant, are also conjoined with it ; and these are the abdominal muscles, and also those of the extremities.

LIV. With respect to the first, it appears that the abdominal muscles and adjacent parts have a considerable effect in assisting delivery, as a proof of which we find that distorted women, in whom the thorax and abdomen are more contracted, and in whom of course the action of these parts is more imperfect, independent of the state of the pelvis, have generally protracted labours. Hence the propriety of voluntary straining on the part of the patient to assist delivery, though, at the same time, it should never be carried too far, and only employed when the primary action of the uterus co-operates.

In regard to the second again, or the muscles of the extremities, when put in action, they fix those parts of the body to which the former are connected, and render their operation more extensive. Hence the advantage of particular positions, which authors have directed, as facilitating delivery.

LV. Having thus detailed the progress of natural labour, and offered some hints towards ascertaining its theory, its management in the last place claims our attention.

The chief point to be observed here is, that natural labour is that species which is performed by the natural powers alone; and of course that the assistance of the accoucheur to forward it is at least unnecessary, if not injurious. The great merit of an accoucheur in these cases is,

1. His shewing a sedulous attention to favour the natural efforts, by directing the proper management of the patient, so as to prevent harm being done by female prejudices; and,

2. His displaying his knowledge, by forming a just prognosis of the duration of the labour; a subject on which he is commonly interrogated, both by the patient and her attendants.

LVI. The former of these he endeavours to execute,

1. By directing the proper position for delivery.
2. Obviating any morbid symptom, which arises during the progress of labour.
3. Preventing over exertion on the part of the patient; and,
4. Where languid, assisting the natural efforts by strengthening the general system.

LVII. With respect to the first, the custom of different countries has occasioned a great variety to be observed; and to point out the proper one, it is necessary to consider what is required for this purpose.

The first thing is certainly the ease of the patient; and,

The second, that the uterine efforts be no way counteracted.

LVIII. Both these purposes are answered by the position now most generally employed, which is lying in bed on the left side; and this position, in the present class of labours, is most agreeable for delivery, most convenient for the operator, is easiest for the patient where any morbid circumstances occur, and does not, by any pressure on the soft parts receiving dilatation, prevent their extension as takes place in the back position.

LIX. Before the patient is directed to any particular posture, and, indeed, even confined to bed, the progress

of the labour should be pretty far advanced, and the second stage almost completed.

There is very little danger of being too late with this, as the feelings of the patient will incline her to retire to bed much earlier than perhaps is necessary. During the first stage of labour, it is improper to confine the patient to any one position; for its duration being uncertain, the time will pass more easily, and it is only from the period that women are confined to bed they judge of the slowness of their labour. There can indeed be no proper time fixed when the patient should be put to bed, as it must be determined entirely by the circumstances of the labour, and this the accoucheur himself will be best able to decide.

LX. During the progress of every labour, even the most easy, from its effects on the system, certain morbid symptoms arise, which require attention, and which we must endeavour to palliate.

LXI. One of the most frequent of these is *sickness*. With many women it commences with labour, and continues during the whole progress of it. With others it only begins when the labour is pretty far advanced, and the os tincæ fully dilated. From the exertions of vomiting it occasions, it proves an assistant to the pains where they are weak. But where no vomiting occurs, and the sickness is very violent, it occasions, frequently, a suspension of labour to take place. We can do very little to it, except washing out the stomach, for the cordials, which are commonly in this case given, tend much to increase it.

LXII. *Diarrhæa* is likewise a usual attendant of labour. In some it begins regularly, as formerly observed (XI.), with a degree of cholic. In others it takes place where the head is so far advanced as to stretch the perinæum, and of course dilate the rectum. In this last case it requires no attention; but in the former it may be alleviated by an opiate glyster.

LXIII. *Suppression of urine* is also a complaint that occurs in the commencement of labour. It requires then particular care; for by allowing it to proceed till the head is engaged in the pelvis, from its compression on the neck of the bladder, the introduction of the catheter becomes very difficult, often impossible; and where the suppression continues above twelve hours, and cannot be relieved, delivery must be had recourse to with as much expedition as possible, and that by the most gentle and least coercive method. Thus a labour, strictly natural, and which might have terminated easily, is, by this symptom, often rendered one of the most troublesome, and which sometimes ends fatally; for, independent of the quantity of urine accumulated, which threatens the rupture of the bladder, and excites its action, the pains of labour come, from this irritation, to be totally suspended.

LXIV. *Costiveness* is a complaint natural to pregnancy; and where allowed to proceed, is sometimes troublesome in labour. On this account, a glyster should always be exhibited at its commencement; for, by clearing the bowels at this period, it give less trouble for some time after delivery.

LXV. *Cramp* is also very common during the pro-

gress of parturition. When in the belly, it is most severe, and requires to be alleviated by the use of opiates; and, if the membranes are not broken by their rupture, allowing the uterus to contract, and thus lessening compression, the complaint is relieved. Cramp of the thigh again is less to be regarded. It generally comes on when the labour is pretty far advanced, and prevails chiefly in one thigh.

LXVI. *Flooding* likewise frequently occurs in labour, even in its most natural state. It usually takes place where the labour is tedious, or where the patient is overheated and uses much exertion. If moderate, little is to be done but attending to the state of the patient, and its effects upon her. If severe, it is then alarming, and requires delivery to be expedited as quickly as possible, in the manner pointed out in flooding cases.

LXVII. Next to obviating the complaints of labour, now described, *preventing over exertion* on the part of the patient, as inducing these, is to be strictly recommended. This most commonly takes place in a first labour; for the patient, on the least irritation, strains with considerable force, which, wanting the co-operation of the uterine action, has very little effect. It often does harm, by occasioning a degree of fever, marked by a general increased action of the system and intense heat within the vagina; so that bleeding, to prevent inflammation, becomes often necessary.

LXVIII. The opposite also of this state, or a *torpor of the system*, by which the natural efforts are not properly assisted, occurs at times, though less frequent. When met with, it constitutes a species of natural la-

bour, termed by the women themselves a sleepy labour, the patient inclining to doze during the whole of it, and being hardly waked, even by the recurrence of pain. In this case, a moderate use of stimulants may be proper, though in general the use of cordials is not much indicated in parturition.

LXIX. These form the first circumstances that demand the attention of the accoucheur in conducting natural labour. The next, or his opinion with respect to its duration, is a more difficult task to execute. No opinion, indeed, can be formed, with certainty, on this head, as it is connected with such a variety of circumstances that may retard its progress; but, in order to form a probable judgment for our own direction, we compare the extent of dilatation of the uterine orifice, in a given time, with the strength of the pains. The dilatation we observe at first slow, but it is otherwise when it gains a certain extent; and if it requires six hours to dilate the os uteri one half, it will not take above one hour, where it admits a portion of the head, to dilate the rest. When the head advances within the vagina, the prognosis is more uncertain. The resistance which the soft parts may give may occasion its being detained, even some hours, at the os externum, the sphincter of which, if entire, may be considered as another orifice, to be overcome like the os tincæ.

LXX. Since natural labour is accomplished by the efforts of the patient alone, it becomes proper to ascertain what interference is necessary on the part of the accoucheur at all, during its progress.

Till the head is advanced so far as to press against the perinæum, even touching is unnecessary, except to ascertain the presentation, which is generally done soon after the commencement of labour. Too frequent touching is attended with bad effects; for,

1. If not very cautious, you are liable to rupture the membranes prematurely; and the more so, if a small portion is protruded beyond the os uteri, which is sometimes the case while the latter is very little dilated.

2. By such interference the parts must unavoidably be fretted, which we find particularly the case where midwives attend; and,

3. By touching, the patient has generally an idea of your conveying assistance, while, if the labour is not soon terminated, she cannot entertain the most favourable opinion of its success.

LXXI. When the head begins to press against the perinæum, has been mentioned by authors as the proper time for placing the patient in the position intended for delivery. This, however, though a general rule, is by no means to be strictly adhered to, but must be regulated by the former circumstances of the labour, with respect to its duration and the apparent state of the external parts, or the resistance they may form to its expulsion. The confinement to bed at this period of labour proceeded on the practice inculcated by many eminent accoucheurs, that it was necessary to support the perinæum by the pressure of the hand, to prevent its laceration. But by this practice one of two circumstances must take place. If the pressure is so strong as to prove effectual, it must counteract entirely the influence of the pains, as the dilatation of the soft parts, when the head has advanced so far, is then only want-

ing to affect the delivery. But, even independent of this, such pressure occasions it to be violently bruised, and if so slight as not to induce this, it may indeed shew an attention to the patient, but can be of no service in easing the pain of delivery. It may be also affirmed, that laceration of the perinæum has as often taken place where this pressure was applied, as without it; for the violence of the last pains is generally so strong, that without a degree of pressure, which no practitioner will think safe to employ, they cannot be counteracted.

LXXII. The advance of the labour to this length may be even judged of by the nature of the pains themselves, or their effects on the patient: for, in the second stage, the force of the presenting part is counteracted by the interposition of the waters, which act as a medium, and blunt its effects against the sensible uterine orifice. Hence the pains of this stage, where the membranes continue entire, are generally bearable. In the commencement of the third stage, again, when the uterine orifice is retracted, and the waters break, the force of the presenting part is directed against the bony cavity, and the pains here are not more severe than in the former; but towards its termination, when the head descends against the perinæum, the pains become so strong and severe, as to differ in their effects on the patient, from any of the former, becoming in some measure intolerable, and obliging her to cry out.

LXXIII. When the head has pretty nearly filled the perinæum, the tumour of the external parts begins to form, and is at last expelled. When expelled, the face generally turns to one side, directed by the position of the remaining parts.

LXXIV. On the protrusion of the head, practitioners generally imagined that the rest of the delivery belonged entirely to them. The head, therefore, was taken hold of, with a hand on each side, and violently pulled forward, so as to disentangle the rest of the body. But by this practice the patient was subjected to many inconveniences, which even affected her recovery. The reason assigned for this method was, the danger the child suffered from compression of the cord by this delay: but till part of the body is protruded, the cord can never suffer compression, unless it is circumvolutèd round the neck of the child, and, in this case, such practice may be allowed.

LXXV. Mr. WHITE was the first, who, from an attention to the natural efforts, pointed out the propriety of trusting also this part to the same power; for, after the protrusion of the head, a short respite taking place, the pains are again renewed, and the shoulders, observing the dimensions of the pelvis, enter its brim towards the ilia, and descend, in this position, till its capacity is changed by the protrusion of the ischia, when turning towards the pubes and sacrum, as giving the most enlarged space, they are expelled in this direction. A neglect of this practice occasioned the expulsion of the placenta to be generally more difficult, and the after-pains also to be more severe; for if the operator pull forth the child, the last efforts of the uterus are prevented, which have the chief effect in separating the placenta, and the soft substance of the latter does not afterwards give it such a stimulus as to excite anew its ready contraction. In the same way, by the want of these last exertions of the uterus, small coagula are retained in the extremities of its vessels, which are expel-

led at last by the action of the uterus, marked by what are termed after-pains, and these are rendered uncommonly severe from their not being expelled during the previous efforts of labour itself.

LXXVI. When the child is expelled, it is laid upon its side, with its back towards the mother, and the next step that remains is to separate its connection with her by dividing the umbilical cord. With respect to the proper time, however, of doing this, different opinions prevail. It was formerly the custom, and is still too much employed, to make this separation immediately, or, at least, as soon as the child had given any signs of life. But, in passing from the foetal to the perfect animal state, the necessary changes in the circulation require some time. The lungs of the child, when at first distended, are imperfect in their functions; and, by allowing the connection with the placenta for some time to remain, the latter, from its supposed secondary office of supplying the use of the lungs in the foetal state, will be an assistant at this time to the lungs till their proper action is established. Hence the propriety of a practice employed by many accoucheurs in cases of still birth, the immersing the placenta in warm water, to allow its circulation, from its effects on the foetus, to continue.

LXXVII. For these reasons specified, till the circulation in the umbilical cord is stopped, no division should take place. When that happens, a ligature is to be past on the cord, about two fingers breadth from the umbilicus of the child, and tightened so as to make a proper compression on the vessels, though there will be less danger of any hæmorrhage if this practice is observed.

of not dividing the cord till the circulation in the child is once established. The cord may be then cut, and the child removed; but many authors advise, previous to this, and it is by far the most cleanly method, that a second ligature should be past on the cord, about an inch distant from the former, and that the divisions should be made between them, by which the contents of the placenta will be prevented flowing into the bed; and, in case also there is a second child, which you do not at first discover, no hæmorrhage will ensue to prove hurtful to it.

LXXVIII. Dr. SMELLIE advises but one ligature, by which the placenta, he says, unloaded of its blood, will shrink in size, and assist the separation; but it is not the placenta that occasions this separation, it is the uterus itself. Hence a small diminution of its bulk can have little effect in this way; nay, the larger the placenta, the more readily will it separate, by giving greater irritation to the uterus, and exciting its more powerful contraction, though it may, perhaps, unless care is taken in bringing it along, excite a spasm of the *os tinæ*. It is, perhaps, immaterial which practice is pursued.

LXXIX. Having thus considered the proper assistance natural labour requires, it may be proper next to offer a few observations on the treatment of the patient during its progress.

In general, during the time of labour, digestion does not proceed as usual. Similar to acute disease of some principal organ, the other functions are either entirely suspended, or greatly weakened, during its continuance; or the attention of the system is as it were wholly taken

up with the present state. On this account, with most patients, little solid food will be necessary; and, if any way irritable, the stomach is even apt to reject it.

LXXX. In delicate habits, however, at times, this general rule must be infringed, as the exertions employed require some stimulus to continue them, and the patient is apt to fall low, and to become dispirited. In the choice of stimulants, many restrictions have been enjoined by accoucheurs, from their endangering flooding after delivery. It is to be doubted, however, if flooding after delivery is ever endangered by this cause. It most commonly arises from a state of the organ itself, unconnected with the general circulation. Whatever accelerates the general circulation must have an influence on the solids in a primary manner, while the effect of any increased action on the solids must give a tendency to contraction, the very thing in such an occurrence wanted.

LXXXI. Of labour, the proportion belonging to this class is 99 out of 100. The improvement in their management is justly due to modern practitioners. The first æra of it was in the beginning of the 15th century, when the introduction of the term laborious, as a division of this class rather than a separate one, took place. From that period its limits have been gradually extended. Artificial assistance has been less frequently employed; and its perfection seems at last to be almost completed, by the application of the same rules of conduct in the delivery of the rest of the body as had been formerly confined entirely to the head.

LXXXII. The expulsion of the child is immediately succeeded by the evacuation of the remaining por-

tion of the water retained after the rupture of the membranes, in consequence of the head, by its filling the passage, confining them. The contraction of the uterus next succeeds, and occasions the separation of the placenta, which has already almost entirely taken place during the last efforts of the organ to expel the body of the child; and this separation is attended by a discharge of blood from that part of the surface of the uterus formerly occupied by the separated portion of the placenta. This continues till the contraction of the uterus proceeds so far that the situation of the placenta comes to be confined. The organ then resumes its contraction in a slight degree, proportioned to the size of the body, the softness of its texture conveying less irritation, and the state of the organ itself not being so easily acted on as during the progress of labour; and by this contraction it comes at last to be gradually expelled,—the pains that effect this resembling those which distinguish the first stage of labour.

LXXXIII. The expulsion of the placenta is immediately succeeded by the discharge of any remaining excess of fluid in the vessels of the uterus, when the organ is reduced somewhat to its natural state,—feeling to the hand, applied on the os pubis, as a small hard round tumour, and leaving the abdomen, and situation it formerly occupied, in a flaccid state.

LXXXIV. Such is the usual process by which the delivery of the placenta is effected. It becomes next proper to consider,

1. How far the interference of the accoucheur is at all times necessary in assisting it; or,
2. What circumstances determine him, in particular

cases, to anticipate the natural efforts, and, by manual aid, perform it entirely.

LXXXV. On no subject of practical midwifery have accoucheurs differed more than on this of the management of the placenta in natural labour. The idea of the immediate contraction of the uterine orifice preventing its exit, determined them for long on its instant extraction; and, as its complete separation was thus prevented by forcibly tearing it from the surface of the uterus, the mouths of large vessels were exposed in their dilated state, which produced of course a violent increase of hæmorrhage; and the natural contractions of the uterus being counteracted from this violence employed, often produced on it an atonic state, by which this hæmorrhage proved fatal. But even where this termination did not take place, from the fibres of the uterus possessing perhaps more elasticity than usual, inflammation, and afterwards suppuration of that surface of the organ occupied by the placenta, frequently happened, and the patient was thus subjected, from the too officious assistance of the operator, to all the consequences of a painful and tedious recovery. Independent of this, also, such a practice is particularly reprobated by the very great and unnecessary pain the patient must unavoidably experience, who, from the violence of the former parturition, compared with the present interval of ease succeeding the expulsion of the child, expects no such renewal of the former agony.

LXXXVI. This practice then was succeeded by an opposite procedure, or an opinion that the natural efforts should at all times be trusted with the expulsion of the placenta, and that the hand of the operator should in

no case be introduced into the uterus for the purpose of its extraction. This opinion was strongly inculcated by RUYSEN, to which he was led by the pretended discovery of the musculus orbicularis at the fundus uteri, the use of which he considered as intended in a special manner for the expulsion of the placenta. Though less dangerous than the former on the whole, this practice was still, in particular situations, attended with fatal effects; and its retention, till actual symptoms of putrefaction occurred, was the consequence of an unlimited confidence in the efforts of nature. Truth, however, is seldom in extremes; and Mr. Puzos was the first author who pointed out with judgment the proper mode of practice in this part of delivery. He has been succeeded by Mr. WHITE, who, in his publication, has entered fully into this subject, and who, from a number of very just observations, the result of an extensive practice, has at last fixed the conduct of practitioners in this part.

LXXXVII. It may be laid down then as a general rule in most natural cases, when no particular urgent symptoms occur, that the management of the placenta should be trusted to nature, by which is meant, that the accoucheur, waiting a certain time, till the patient complains of slight uneasiness in the uterine region, and previously ascertaining by the external feel of the abdomen the state of contraction, should gently assist the uterine efforts by twining the cord round the fingers of one hand, while the other is applied to it higher up, within the vagina,—giving the proper direction for the exit of the placenta, by pulling the cord in a line with the centre of the pelvis, or as much as possible towards the sacrum. If the uterine efforts are exerted, the cord will be felt to

lengthen at each pain; if the complete separation has taken place, one pain will be sufficient; if not, let an intermission take place, waiting the repetition of more, which will soon occur; and in this way the extraction will soon be completed.

LXXXVIII. Before making any attempts at the extraction of the placenta, as described (LXXXVII.), a space of at least fifteen or twenty minutes after the delivery of the child should intervene, or in proportion to the duration of the former labour and apparent irritability of the uterus, the expulsion of the placenta being most speedy where the former parturition is tedious; and in this interval nothing should be done, except applying a warm cloth to the pudendum, and occasionally feeling the state of contraction in the uterus.

LXXXIX. From the state of the uterus, the repetition of pains is sometimes marked by so little uneasiness, that the patient, from their comparison with the former, has no idea of their being really so. If, however, the patient, in the specified time, complains of an increased flow of blood as denoting the separation of the placenta, assistance is then to be given in the manner directed.

XC. This is the common management we would recommend; and, in ninety cases out of one hundred, it will be found sufficient for the delivery of the placenta. But particular situations occur, in which this method may prove ineffectual, from urgent symptoms arising, which demand at once a speedy extraction.

XCI. These circumstances are,

1. Violent hæmorrhage affecting the pulse.

2. Faintings, the consequence of the former; and, in this last case, the hæmorrhage is sometimes concealed; or the placenta, filling up the orifice, confines the discharge.

XCII. The causes of these symptoms, though ultimately depending on the retention, may be referred either to the placenta itself or the uterus.

Where depending on the former, they consist in morbid adhesion or rupture of the cord; where on the latter, in spasm or irregular contraction of the organ.

XCIII. Morbid adhesion is the most dangerous cause of retention, and that in proportion to the space of surface over which the adhesion extends. It may be either general or partial. The former is very rare, though some uncommon instances have occurred where the placenta possessed a general schirrous hardness; and being thus incapable of separation, was retained for years.

XCIV. Partial adhesion is more frequent, and the point or lobule in this case is often retained, being separated from the rest of the placental mass by the operation. It is known when, after waiting the usual time, the placenta does not separate on any efforts we employ to assist, but the cord being extended, returns back with an elasticity; and, on applying the other hand to the region of the uterus externally during these efforts of extending the cord, we find the uterus drawn forward, and again, on slackening the cord, recoil back to its former situation.

XCV. In this case several different modes of treatment have been recommended, in addition to pulling by the cord, in order to increase the contraction of the uterus, and effect a separation. These are sneezing, coughing, friction of the abdomen, strong pressure downwards, &c. But when the adhesion is so strong as to resist pulling by the cord, these expedients will be ineffectual, and even tend to increase the hæmorrhage, already profuse. Nay, the rapidity of the latter, and its powerful effects on the patient in a few minutes, will seldom admit the delay of such modes of practice.

XCVI. The introduction of the hand, therefore, into the uterus is preferable, and the method of doing it is this.

Let the hand, in the form of a cone, be quickly passed through the vagina, for in passing here it chiefly gives pain, into the uterus, which will readily admit its entrance, and carry it as high as possible towards the situation of the placenta, to which you will be directed by the cord. Let the fingers then be spread out on the body of the placenta, so as to take a large hold of it; and drawing them in towards you, let the body of the placenta be graspt, when the adhering portion will separate from the surface of the uterus, or peel off; then turning the palm of the hand towards the abdomen, let it be gradually brought out with the placenta.

XCVII. Partial adhesion of the placenta is most liable to occur from previous diseases of the uterus, especially inflammation. It is always ready to occur in a subsequent delivery, where any force has been necessary to

effect the separation in a former; and, more especially, if the placenta occupy the same situation as it did then. In many women the uterus seems naturally to form too firm a connexion with the substance of the placenta, and its extraction is necessary in every labour. The pressure of some member of the fœtus in a particular manner during pregnancy, against part of it, may occasion also such adhesion; and the more its situation recedes from the fundus, it is alleged by some authors, there is danger of partial adhesion, as the contraction towards the neck is not sufficiently powerful to admit its complete separation.

XCVIII. In every case where, on the introduction of the hand, as recommended (XCV.), the adhering portion cannot be easily separated, rather than use violence to the surface of the uterus itself, it may be allowed to remain by detaching the rest of the placenta from it; for it will be very rarely so considerable as to produce any very troublesome effects.

XCIX. Rupture of the umbilical cord is the next cause of retention enumerated. It depends much on the operator; and we can only ascertain by practice what degree of force the cord can bear. Its rupture, however, may arise from either of four circumstances.

1. The application of too much force, even where it possesses a proper degree of strength.
2. Its improper attachment weakening the degree of its adhesion.
3. Its thickness, the interposed gelatinous matter occasioning its vessels to be too much extended; or,
4. An incipient putrescency of the placenta itself.

C. With respect to the first of these circumstances, it has been known to occur at times in the hands of the best operator. It is always unpleasant, as the appearance of the placenta after extraction without the cord gives an idea to the attendants of the operation being incomplete. It is by no means a dangerous circumstance of itself, as the hand, though wanting the direction of the cord, can easily distinguish it from the surface of the uterus by the irregular vascular feel which the termination of the umbilical vessels on its surface occasions, by the absence of pain, as the patient does not feel any great uneasiness when touched by the hand; and, lastly, by its soft spongy texture, compared with that of the adjacent uterus.

CI. This accident of the rupture of the cord is very liable to happen to a young practitioner, who trusts rather too implicitly in the powers of nature; for an aversion to the introduction of the hand will lead him, with a view to overcome the difficulty, to exert more force than the parts can bear, and he is then obliged to have recourse to the same means, which, employed earlier, would have been attended with fewer obstacles. On this account, perhaps, a young practitioner should be advised, where any appearance of difficulty occurs, to introduce his hand oftener, for its extraction then may be strictly necessary, as he has not then ascertained by his own experience the proper time of waiting, nor yet the degree of force which the cord can commonly bear, while, if it is done cautiously, the patient will receive little or no disadvantage, and, at the same time, the accoucheur will acquire a facility of introducing his hand into the uterus in such situations,

which will render him no way intimidated to undertake it when strictly unavoidable.

CII. The second circumstance mentioned as occasioning rupture of the cord was its improper attachment; for in proportion as it is situated too near the edge of the placenta, its adhesion must naturally be weakened, from the smaller number of branches, or points of connexion. The same degree of force which can be safely applied while its insertion is more towards the centre of the cake will be sufficient to occasion its rupture here.

CIII. The third circumstance affecting the strength of the cord is its thickness. This circumstance has been particularly remarked by Mr. Puzos; for as it proceeds from a quantity of coagulable lymph, by which the coats of the umbilical vessels will be more extended, in proportion to this extension they must lose of their strength; and hence all practical accoucheurs have remarked, that it is not from the apparent size of the cord we are to judge of the degree of strength it possesses.

CIV. The last circumstance producing a separation of the cord from the placenta is an incipient putrescency of the latter. This more especially occurs in premature labours, particularly where any cause existing in the habit of the mother tends to weaken the attachment between her and the child. And it is a singular fact, that the placenta will be delivered at times in a semi-putrid state, and yet the child appear at birth equally vigorous and healthy with any others as where the placenta retains its usual health. This, however, is not to be considered as always the case.

CV. These are the several causes which depend on the placenta itself; those again, which may be referred to the state of the organ, are even more frequent in their occurrence, and demand equal attention. The first enumerated was its irregular contraction.

CVI. By this, part of the membranes comes to be inclosed by the fundus, and proves a cause of the retention of the placenta, though it is otherwise completely separated; and in this case the introduction of the hand to the fundus uteri will be equally necessary, as where the adhesion is much stronger.

CVII. The second cause again, or spasm, is equally frequent, and especially after a first labour, where the habit of the patient is naturally irritable; and by it its cavity is either contracted in the middle, in the form of an hour glass, or its orifice is shut up, retaining the placenta from being expelled. In the first case the spasm is very difficult to overcome; and, if time admit, a large opiate should be administered (a practice first inculcated by the late Dr. HUNTER), and the hand retained in the uterus, endeavouring to overcome its contraction till the spasm is relaxed. When once this takes place there will be little difficulty in effecting the extraction.

CVIII. This species of retention the French have properly termed the Encysted Placenta. It was first remarked by Mr. PEU, who gives several instances of it in his treatise, though it has been erroneously supposed to depend on the situation of the placenta; and that the more directly it was placed at the fundus, the more liable was the spasm to occur. The placenta, however, we

find generally situated at the fundus; yet this spasm of the uterus does not occur once in a hundred times; and therefore it must arise entirely from the state of the organ, independent of any situation of the placenta.

CIX. Spasm of the orifice we find most frequently occur in the hands of females, who do not attend to the axis of the pelvis in extracting it. The os uteri of all parts of the organ is most acutely sensible; and, after the expulsion of the child, by its sudden return to its natural state, where the fibres possess much remaining elasticity, a degree of spasm of it is induced. This, however, is generally overcome by the action of the fundus in expelling the placenta, where attention is paid to carry it directly through the centre of the orifice; but where this is not observed, and the operator attends only to the centre of the vagina, it is pulled against the orifice in an unfavourable manner, and the spasm, instead of being overcome, is more rigidly formed. In this case a finger or two must be introduced into the os uteri, to catch hold of the edge of the cake, which, being brought without the orifice, the bulk of the placenta will naturally follow.

CX. Another cause of the retention of the placenta mentioned by authors is the inertness of the uterus. This more readily happens in cases of over-distension of the organ, where more than one child has been contained in it. The great matter here is to give time; and, by friction of the abdomen, and even irritation of the os tinæ, to excite contraction.

CXI. This subject of the management of the placenta has been detailed with too much minuteness by

BAUDELOQUE, the best author on midwifery, who has given particular directions for its treatment, according to the different situations of the uterus it may occupy. This, however, is not necessary. The general rule is, wherever symptoms requiring its extraction occur, let the hand be introduced, when the cause of retention will be ascertained, and for the most part easily obviated; after which there is no difficulty in the extraction.

CXII. Having thus detailed the different methods of managing the placenta, whatever treatment we adopt the following maxims may be laid down:

1. That, even though no urgent symptoms occur to determine its extraction, yet the patient should never be left by the accoucheur while it is undelivered, as, a partial separation taking place in his absence, fatal hæmorrhage before its expulsion may ensue.

2. The retention of the placenta should in no circumstances whatever exceed 48 hours, as symptoms of putrefaction then supervene, which endanger the consequences of absorption into the system, as well as its action against the organ itself*. This is sufficiently confirmed by the cases of Mr. WHITE, where too long retention of the placenta appears to have produced the most fatal effects; and even where at last excluded, after a continuance of some days, fever generally supervened, and from the weakened state of the uterus, not able to resist the increased circulation hereby induced, a pro-

* The author had lately an opportunity of seeing, along with Dr. GARTSHORE, a very singular case, where the placenta after delivery was never expelled, and where no dangerous symptoms followed. It was at the distance of five weeks from delivery that the author saw the patient; and he has since learnt that she is perfectly well, without its ever coming away, or there being any appearance of discharge.

fuse flooding generally succeeded the exclusion, and proved fatal to the patient.

CXIII. The delivery of the placenta should in no case, even where attached, as sometimes happens over the os tinæ, precede the birth of the child; for by its removal the uterine circulation is always exposed; and without the organ possess an immediate contraction, a fatal hæmorrhage must ensue. Hence, in these cases of flooding, where the placenta presents at the orifice of the uterus, on the introduction of the hand for the purpose of delivery, it is to be cautiously avoided, and an entrance procured into the uterine cavity in another direction, so as to prevent, as much as possible, any separation of it; nay, if completely occupying the os tinæ, a passage is to be made through its substance, rather than separate any of the points by which it adheres; and this is a situation of it at times met with.

CXIV. In abortion the management of the placenta was formerly detailed; but the same danger from its retention does not take place to that degree as succeeds the delivery of the mature foetus, and it is often, therefore, unavoidably retained.

CLASS II. *Of protracted Labours.*

CXV. This class we define,—labours beginning as natural, but where the pains do not recur in their progress with the same force and regularity as in the former, or, from the different state of the containing parts, forming

a morbid resistance to their efforts, where, even though powerful, they are attended with small effect, being marked in their course by considerable intermissions of uncertain duration, and the pulse, in the intervals of pain, retaining for the most part a quickened febrile state.

CXVI. Under this class we mean to comprehend those laborious cases where nature, with time, of herself effects the delivery. And authors under this division have included every labour whose duration exceeds twelve or eighteen hours. Yet other circumstances may be introduced to distinguish them, as well as the simple period of duration.,

CXVII. From the definition offered (CXV.) four leading circumstances are noticed as characterising them; and these are,

1. Irregularity in the progress of pain.
2. Want of effect.
3. Intermission; and,
4. General fever.

CXVIII. In natural labour the pains, it was remarked, observe a regular progression, according to its duration, and on which we can depend. They are at first slight, and distant in their period of attack. Their occurrence becomes gradually more frequent, while they acquire at the same time an increased power, and their force becomes so violent in their last exertions as to require the assistant efforts, on the part of the patient, to be somewhat repressed, from the danger of rupturing the external parts, an accident that frequently takes place where they are quick.

In the present class again, this progression of pain does not proceed with regularity; and hence we can form from it no prognosis, or determine the period of continuance.

CXIX. Every pain also in natural labour possesses a sensible power on the uterine orifice. In the protracted each single pain has comparatively little or none; and, where even it has, the effect gained is frequently lost by the orifice again contracting on its departure, from the different state of the parts, and the efforts of several pains therefore, with the greatest voluntary exertions the patient can employ, have generally less influence than one pain in natural labour.

CXX. No intermissions properly prevail in natural labour, except on the rupture of the membranes. When the uterus possesses much elasticity, this is even very trifling, and one continued pain often takes place till the head is expelled. Hence one of the distinguishing marks of labours of this class is their intermission; for the uterus, finding itself incapable of overcoming the resistance, has its action for a time suspended, similar to what occurs in the bladder of urine in cases of suppression, or in the stomach when worn out with the repeated efforts of vomiting: and this suspension is attended with a state of feeling in the uterine fibre, which, not rising to the height of pain, communicates however to the system a degree of irritation, occasioning fretfulness, and restlessness in the patient, which it is often difficult to overcome. In this suspension of uterine pain a great regularity is observable; and where the labour is protracted for several days we may generally expect an intermission every twelve hours. This is even remarked by the women themselves; and generally taken notice of by them to the practitioner.

CXXI. The last circumstance enumerated, as discriminating protracted labour, is, the occurrence of actual fever, or rather continued pyrexia. This does not properly occur in natural labour. The increased action in it is merely temporary, and attends only the pressure of pain; and, if continued, it is confined generally to the stage of expulsion. Besides, in such cases, the pulse is full and strong; but, in the protracted labour, particularly in its advanced stage, it becomes always considerably quickened, and for the most part weak.

CXXII. The causes of protracted labours have been detailed at very great length by authors, and they have even extended them to a number almost infinite, so that no practitioner in his attendance can recollect the one half of them. Before entering upon the enumeration of them, it may be asked such authors what is their intention in remarking these difficulties,—certainly in order to detect and relieve them. If these difficulties, then, are not apparent in the progress of labour, their knowledge is of no consequence; and it is only those that are apparent, and which we can remedy, that deserve our attention.

CXXIII. These several causes may, from their mode of action, be reduced to two general heads; either,

1. Want of power, or impaired uterine action; or,
2. Real resistance, impeding the effect of the action.

CXXIV. Under the first we comprehend weakness—early rupture of the membranes—over distension—or fixed irritation of some neighbouring part.

Under the second, rigidity of the os tinctæ—contrac-

tion of the parts—narrowness of the pelvis, without any real distension, &c.

CXXV. Weakness from relaxed habit cannot prove a cause of difficult labour; for the same relaxation that prevails in the uterus will prevail in the external parts, and hence the labour cannot be retarded on this account. In proof of it, we find that women of a fair complexion and fair hair, in whom such a state of solid generally prevails, suffer proportionally less than those of an opposite temperament; women also, even though weakened by disease, as in the last stage of phthisis, have easy deliveries. It is only in cases of little women such a cause can have effect, where, from the diminished capacity of the thorax, the assistant efforts are not sufficient to aid those of the uterus, and in this way deformed women, even where the pelvis is well shaped, have often protracted labours.

CXXVI. An early rupture of the membranes and premature exclusion of their contents is also a frequent cause of difficult labour, and the manner in which it acts it is proper to explain.

The dilatation of the uterine orifice depends for its quickness on the distending body being engaged in it. Where the waters are kept entire, they accommodate themselves to the degree of dilatation; but the head cannot; and therefore till the os tincæ is dilated so far as to receive the head the dilatation must be very slow, and depend on general pressure, while part of the fluid retained by the head filling the passage will at the same time prevent the uterus from receiving that increased stimulus from the resistance of the child which is necessary to render the pains here strong and forcing.

CXXVII. A third cause of slow labour, by impeding the uterine action, we mentioned to be over distension.

In case of twins, the contractions of the uterus we find slow and trifling; and till the waters are expelled, the pains seldom possess any force or pressure sufficient to effect delivery. The signs of twins, however, previous to the birth of the first, are all fallacious; and therefore the rupture of the membranes, as supposing the protraction from this cause, may be attended with bad consequences, if not really so, and even increase that very state of contraction we wish to remove.

CXXVIII. A fourth cause enumerated under this first division was fixed irritation of a neighbouring part. This is well exemplified in cases of suppression of urine, labour being evidently detained by this cause. Costiveness has been also mentioned; but the rectum is a more passive organ than the bladder, and is accustomed to bear such irritation. If also impeding labour, this can only happen in the third stage, and while the presenting part is passing through the space of the pelvis. The effects, however, of suppression of urine are always considerable; and convulsions in labour are known frequently to arise from this cause.

CXXIX. These, then, are the several causes which act merely by weakening the uterine efforts, and form the first division on which the protraction of labour depends; the second, or those which form a real resistance to the efforts, however powerful, are more numerous and more difficult to obviate.

CXXX. The first commonly remarked is rigidity

of the *os tincæ*,—the orifice, from the commencement of labour, feeling firm and elastic, and in the progress of the second stage acquiring an increased thickness, or appearing in the form of a tumid ring round the presenting part. Sometimes in women who have had children it divides into two flaps, placed towards the pubes and sacrum,—the former retaining an unusual thickness, which is increased by its pressure in the time of pain against the bone, and which retards the dilatation of the orifice.

CXXXI. A cause of difficult labour may be here mentioned, which, though connected with this article of rigidity, can hardly receive this title. It occurs in a first labour, particularly where the female is of a sanguine temperament, and where the *os uteri* possesses a very elastic irritable state; for by the action of the fundus it is frequently thrown into spasm, and before this can be overcome the patient will often be several days in labour: nay, in the course of labour, the orifice will at times dilate to a certain extent; and on examination some time afterwards, be again somewhat contracted. In these cases a practitioner, in forming a prognosis, may be very much mistaken; and as the *os uteri* is always here very low, and its sides even uncommonly thin, he may be the more deceived in forming an opinion.

CXXXII. The real rigidity is the effect of either age or disease. We find it therefore generally occur in a first labour, where the woman is advanced in life, and where of course labour commences before the neck and *os tincæ* are extended to the same degree as in other cases; the general rigidity of the uterus hindering the fundus from yielding to its contents to the same degree of extent as where its fibres are more soft and yielding.

Where it takes place in subsequent labours, it is generally the effect of long pressure of the presenting part, and of the violence necessary in instrumental delivery.

CXXXIII. The second cause enumerated under this head is contraction of the parts; and hence, in general, every first labour is more tedious than the subsequent. This contraction is connected with two circumstances which point out its nature, either a diminished excretion of mucus in the vagina, or a spasmodic state of its sphincter. That the excretion of the vagina is useful in delivery, there can be no doubt, as we find that wherever irritation is applied, it is the means employed by nature of preventing or obviating inflammation. Hence, wherever it is deficient in a first labour, we find generally a tendency to inflammation; that is, a burning heat within the vagina, and a painful state, so that it gives uneasiness on the slightest examination. The spasmodic state of the sphincter we can only know in the last stage of labour; and in these cases the head will often continue for hours at the os externum, threatening to be expelled every pain, and occasioning the most uneasy state to the patient, from the long stretching of the perinæum and external parts.

CXXXIV. A cause of protracted labour in a first case is also at times a counter-exertion on the part of the patient. It generally only affects the first stage of labour, before the os uteri is fully dilated. The patient, as soon as she feels pain, strives as much as possible against the action of the uterus; and in this way, by want of the assistant efforts, the pains continue to have little effect, till the dilatation of the os tincæ being com-

pleted, the assistant parts are brought so powerfully into consent, that any voluntary opposition on her part has no farther influence.

CXXXV. The third cause, forming resistance to the action of the uterus, is narrowness of the pelvis, without any real distension. This often occurs in women who are early married, and have children before their twentieth year. It is generally known by examination, and the subsequent labours of such women are commonly easy. It is of great consequence in these cases to retard as much as possible the action of the uterus, and to allow a long retention of the head in the passage. Protracted labour from this cause more frequently takes place where the child happens to be a male; and in these cases we may pronounce on the sex *a priori*, and we shall very seldom be deceived.

CXXXVI. These are the several causes (from CXXXIII. to CXXXV.) commonly met with, that occasion protracted or merely lingering labours, which are completed, as well as the former class, by the efforts of nature alone. Many others have been enumerated; but they either very rarely occur, are merely imaginary, or may be explained in a different way. We shall enumerate, however, the principal of them.

CXXXVII. One commonly mentioned has been poly-pous tumours of the uterus or vagina. That these may happen we do not deny; but they are so very rare, that they should not be introduced on all occasions among the causes of protracted labour, as such variety will only perplex the student; and none should be intro-

duced but what frequently occur, and are necessary to be known in practice.

CXXXVIII. In the same manner, we find calculus of the bladder mentioned as having a similar effect. That such has been the case there is no doubt; but that such never occurred to four-fifths of the most eminent practitioners is equally true, which should determine our conclusion.

CXXXIX. Passions of mind have been enumerated too under this head. They form, however, a very accidental cause, and therefore may be properly omitted, where we consider those only that more constantly and unavoidably take place.

CXL. Another strongly insisted on by many authors, is obliquity of the uterus,—a piece of theory which has been unluckily assumed, as is often the case, for a fact. It was to support this supposed discovery DAVENTER's publication was written. That the uterus inclines naturally in the gravid state a little to one side every accoucheur knows; but that the neck and os tincæ are connected so to the vagina, as not to be affected by this inclination, is also true; while the neck, being a fixed point, to which the contraction of the fundus tends, the body contained, independent of the situation of the fundus, must be naturally determined by its action this way. Hence we find no situation of labour occur, but what the os uteri, a proof of its fixed situation, can generally be felt. Besides, as in every case the uterus inclines a little to one side, or forms an obliquity, every labour, on this principle, should be difficult and protracted.

CXLI. Another cause has been circumvolutions of the umbilical cord round the child's neck; but it is to be doubted much in these cases, if the difficulty proceeds from this cause; for the head is naturally so rivetted in the pelvis in every case of labour, that, even supposing it to take place, the fundus uteri would rather be prevented from retracting on the cessation of pain, as being more pliable, or else flooding would ensue, which I have never in these cases perceived; and the child, when born at last, possesses generally a sufficient length of cord to allow its being laid by the side of the mother, which could not happen were the length to affect the delivery. The leading symptom in this case is, the resiliion of the head on the departure of pain; but this may depend on the simple elasticity of the vagina itself, which frequently, on the introduction of instruments, throws them, by its contraction, from their place, after being applied; and this is the more confirmed, as such supposed cases of circumvolution I have generally found in a first labour.

CXLII. In many authors there is found also an improper position of the shoulders, placed towards the sacrum and pubes, mentioned as a cause of protracted labour. Such a case I never met with; and it is now well ascertained that the shoulders, when they enter the pelvis in the same manner with the head, accommodate themselves to its dimensions; and before they enter the pelvis, there is always sufficient room for their passage, either in one direction or another, the space formed by the expansion of the ilia being sufficiently large; so that from this view it can only happen when the head is expelled, and then delivery is always in our power.

CXLIII. Rigidity of the very membranes has also not been omitted among the causes of protracted parturition; but it may be here more properly explained in a different way. It is mentioned by authors as taking place only after the os tincæ is fully dilated, when the membranes remain entire; and, from observation, it stands thus. It occurs in torpid habits, where the uterine fibres possess little elasticity. On the full dilatation therefore of the os tincæ, the resistance from distension being in some degree taken off, or an acquired space gained, the pains become, from the small tendency in the uterus to contract for some time, suspended, or so slight, as to have no effect even on the membranes. On rupturing then the membranes, the fibres being brought into action, or acquiring a degree of elasticity, and receiving at the same time an increased stimulus from the body of the child, labour is soon completed; but the membranes, on their rupture, discover no particular morbid rigidity.

CXLIV. From the causes, we proceed to examine the management of this class of labours, according to the nature of these causes described: this we do by observing, that in their treatment a good deal of art is required; and as the chief object is the gaining time, some address is necessary to ensure the patient of the safety of her situation, and of that perseverance in her efforts which is necessary for its accomplishment. To gain the first, where early called, do not give into her belief for some time that she is in labour; and even when you are at last under the necessity of admitting it, endeavour to persuade her to use no assistant exertions to co-operate with the pains, but let her strength be reserved till the difficulty is in part overcome, when they

will be attended with more effect to expedite the delivery, especially where the cause depends on rigidity of the os tincae.

CXLV. With respect to the first (CXXV.) if real weakness is ever a cause of protraction, cordials are indicated for its removal; but even in patients under disease, there is always observed sufficient strength, if there is no other impediment, to effect delivery.

CXLVI. In the case of early rupture of the membranes (CXXVI.) the waters must be fully evacuated, before the pains possess any sensible effect; and the treatment consists, previous to this, in either letting off what remains, by introducing a finger in the time of pain, and raising the head, which, on two or three times repetition, or in the space of half an hour, will prove effectual; or, instead of this, opiates may be employed to prevent uneasiness, till the waters are evacuated naturally.

CXLVII. In over-distension (CXXVII.) as in twins, the rupture of the membranes will bring the uterus into strong action; but much judgment is necessary, as was observed, to discern that this is the cause of protraction, before attempting it.

CXLVIII. In the case of fixt irritation of some neighbouring part, the ascertaining the latter will determine the particular treatment (CXXVIII).

1. The most frequent irritation is from suppression of urine. This is a circumstance should be always enquired into; for if the head is any way advanced, it becomes difficult to employ the catheter; often impracticable;

and, morbid symptoms arising from this source, it becomes, at times, necessary to expedite delivery by mechanical means, to relieve this affection. If the head is little advanced, an attempt may be made to introduce the catheter, by passing a finger between the head and os pubis, to give space for allowing it to proceed. If again farther advanced, the head is to be pushed into the hollow of the sacrum; and the pressure of the urethra being removed by the natural efforts of the woman, an evacuation may, perhaps, take place; yet, if unsuccessful, the head is still to be pushed back before the application of the catheter; or if too firmly wedged to admit this, a trial is next to be made with a male catheter, to get beyond the cause of obstruction.

2. Another affection, that at times occurs in irritable habits, is spasm of the abdomen, and that to a most violent degree. Its relief is only to be obtained by a liberal use of opium in glyster.

3. Costiveness is generally reckoned by the women a cause of difficult labour, and hence they have always recourse to injections of a laxative kind. It has the good effect to render the use of laxatives less necessary after delivery.

CXLIX. In this manner we attempt to relieve the first set of causes, or those which produce an impeded action of the uterus itself. The second, or those which form a resistance to its efforts, are less in our power.

CL. In rigidity of the os tincæ the treatment consists in the introduction of a finger into the orifice before each pain, and rolling it round, in the time of it, so as to assist the dilatation. Some authors, instead of

the finger, have recommended the blunt hook; and, where a real callous rigid state prevails, such expedients may be employed with some advantage, though the finger is always preferable to any thing else.

Where the rigidity is the effect of disease, and will not yield to the natural efforts, other means will still be required; and we have, in the medical essays of Edinburgh, a very remarkable case of this kind, by the late Dr. SIMPSON, where the rigidity depending on a cicatrix, from former disease, an incision was found necessary to divide the os uteri, and thus the delivery came to be accomplished.

CLI. In the case of contraction of the parts little can be done. The use of oily injections, &c. have been recommended. In these cases, however, where it is a first labour, a considerable fever, and a burning heat within the vagina, venesection is then strongly indicated. This remedy was formerly very indiscriminately used, and in France it still continues to be employed in situations of labour, where it must be detrimental. In this country it has never been a very popular remedy in labour, but it will be attended with the best effects in those circumstances we have pointed out. Many practitioners also have recommended it in real rigidity; but, as the latter is more a chronic state, and a natural effect of age, it can have very little influence here; and, if carried far, there is hazard of its producing such a debility, as, if not protracting the labour, at least retarding the recovery.

CLII. In the last cause enumerated, or narrowness of the pelvis, where a disproportion between the foetal

head and the natural passage takes place, without any particular distortion, it is of great consequence to suspend, as much as possible, the action of the uterus, and to allow a long retention of the head in the passage. This may be done in two ways, either by preventing, as much as possible, the assistant efforts on the part of the patient, or allowing only the action of the uterus itself. And in this way the strength of the patient will be reserved. Or it may be done more powerfully by the assistance of opiates, with the same restriction on the occurrence of pain.

The head in these cases, by simply lying in the passage, becomes gradually moulded to its cavity; while, on the contrary, if propelled with too much force into it, as it is not capable of overcoming the resistance, the head becomes at once so rivetted on some of the projecting points, without any tendency to elongation, that it remains fixt, unless the strength of the patient be very considerable; and as, on the contrary, it is generally exhausted, an entire suspension of pains takes place, or the state of the patient, from being worn out, requires immediate delivery by the assistance of art. On this account it is of great consequence to reserve the strength of the patient, and, by a gradual exertion of the powers of nature, to effect delivery.

CLIII. In this manner would we recommend protracted labours to be conducted, according to the several causes from which they arise.

In the case of circumvolutions of the cord, enumerated as a cause of protraction by authors, (CXLI.), it has been proposed to introduce a finger laterally, to-

wards the neck of the child, and on it a pair of scissars, so as to divide the cord. The objections however to this practice are, that, independent of the difficulty of performing it, if the head is not expelled in a few pains after, the hæmorrhage from the divided extremity of the cord belonging to the child will prove fatal.

CLIV. A cause of protracted labour, hitherto omitted, as deserving a separate consideration, is, an unfavourable presentation of the head, including the variety of what have been termed face cases.

For, though the vertex naturally presents with the face turned to the hollow of the sacrum; yet, in certain rare cases, the face itself forms the presenting part; which is commonly known from its irregular feel: and by the direction of the chin you get acquainted with the particular position of the face.

CLV. Face presentations consist of three varieties:

1. The chin to pubes.
2. To the ischium; or,
3. To the sacrum.

In all these cases the labour, though slow, is generally accomplished by the natural efforts; for, if early called, you can change the direction of the head by pushing up the chin, and then the presentation is altered.

Where it proceeds in the original direction in which it presents, the face of the child is commonly much disfigured on delivery; but this goes off in a short time; and, in all such cases, if the presentation cannot be altered by pushing up the chin, nothing further is to be attempted; for the old practice of pushing back the

head, and attempting to deliver by the feet, is highly dangerous, and what no modern practitioner will ever think of. And, though the delivery is here somewhat slower than in the natural labour, yet, if the pelvis is well formed, it is generally accomplished at last without any particular assistance, the head with time moulding itself in the same manner as in the natural presentation. Such cases are very rare, and hardly ever met with above once or twice in a long course of practice.

CLASS III. *Of Instrumental Labours.*

CLVI. This class we define labours, that observe the same progress with the protracted; but where the morbid resistance is chiefly formed by the included bony space, which is ascertained in their progress, either by examination of the space itself, or the state of the foetal head forced into it.

CLVII. By examination of the space the dimensions of the pelvis can be pretty certainly known. Thus, wherever the finger introduced within the vagina touches easily the sacrum or coccyx, the pelvis is confined in this direction. Wherever again two fingers are not admitted easily under the arch of the pubes a distortion of this part may be suspected. Where the hand introduced by the lateral part of the pelvis is cramped in its passage, the general space of the cavity is defective. Where the finger brought round the head, having already entered the pelvis, feels a considerable space on one side

more than another, a projection of the sacrum takes place; and where the head, on the commencement of labour, is too easily felt, before entering the pelvis, a general shallowness of the capacity is more or less indicated.

CLVIII. By the state of the fœtal head, also, a judgment may be readily formed. Thus, if it do not enter the pelvis readily after the commencement of labour, though assisted by much pressure of pain, if, after having entered, a tumour form on the presenting part, and if the bones also seem to overlap, there can be no doubt that the space is confined for its passage.

CLXIX. In these cases the uterine action proving ineffectual, and the patient becoming exhausted from its long continuance, while fever supervenes, the labour passes from the protracted to the present class, or requires the assistance of art to expedite delivery.

CLX. In the early practice of midwifery all protracted labours were referred to this class, or removed by the use of instruments. In this way their application was too general; but the progress of the science has gradually lessened their number, and of the remaining few even limited the use. It was from the injudicious application of instruments that many practitioners, to conciliate the public favour, have set out of late years with the specious pretence of doing all by the hand alone. Every accoucheur, however, who has a knowledge of practice, will readily allow that they are frequently unavoidable, and that the only safety of the patient depends on their use.

CLXI. The reasons urged against them have been the morbid consequences attending their employment; but, in modern practice, we find that such consequences very rarely occur; and on this account we must conclude, that those practitioners who oppose them, however respectable for their abilities, either use them improperly, or their construction, as used by them, is unfit for the purposes intended. Hence their declamations are only proofs of their want of dexterity. At the same time it is proper that strong cautions should be given against their precipitate application, as it must be allowed that there is no practitioner who is dextrous in the use of them but must have often employed them without any real necessity; yet, if expert, little or no danger will arise from them, while the duration of labour may be thus considerably shortened, with advantage to the patient. Hence the rule of Dr. DENHAM, that every case in which they are required is to be considered as an exception to the established practice of midwifery, is perhaps going too far, for we have instances of patients suffering from too long trusting to the efforts of nature, as well as from too early an interference of art.

CLXII. The intention of all instruments, then, is the extraction of the child; and the principles on which they perform this are either,—

1. By simple detrusion.
2. By compression; or,
3. By actual diminution of the presenting part.

CLXIII. The first of these is answered by the *velis* or *lever*.

The second by the use of the *forceps*; and,

The third by the *crotchet* and *long scissors*.

CLXIV. In all the instrumental labours, before having recourse to the means employed for delivery, certain preparatory steps are necessary to be attended to. These consist in producing,—

1. A due collapse of the adjacent parts affected by delivery; and,
2. Directing the proper position of the patient.

CLXV. The first is effected by clearing the intestines, and by the use of the catheter, where any tendency to retention of urine has taken place during the progress of labour.

The position of the patient should be always studied, to be most convenient for the operator. The back is with this view preferable to any other, the breech being brought towards the edge of the bed, and each thigh held as under, by an assistant placed there for the purpose.

CLXVI. Having finished these preparatory steps, the delivery is next to be attempted. In all labours of this class two stages may be marked out in their progress: the first is that of the application; the second is that of the extraction.

CLXVII. The chief circumstances to be attended to in the former, are—

1. The properly ascertaining the position of the presenting part.
2. Introducing the hand so far, as to be a sufficient guide to the instrument in its application; and,
3. Securing it in such a manner, that its removal may not take place on attempting the extraction.

CLXVIII. The circumstances to be regarded in the latter, are—

1. That the extraction be gradually performed, resembling as much as possible the efforts of nature; and the latter, if occurring, are to be taken advantage of in assisting the extraction.

2. That the bulk of the presenting part be carried by the operator, in its descent to delivery, as much as possible against those parts capable of yielding to admit its passage; and thus observing the different axes of the pelvis and vagina.

CLXIX. With these preliminary observations on instrumental labours, we proceed to their first division, or those cases in which the application of the *vestis*, or *lever*, has been recommended.

1. *Lever.*

CLXX. This is the first instrument we find invented for the preservation of the child; all the more ancient being professedly constructed with the intention of either tearing it to pieces, or being so fixt to the presenting part, as at any rate to destroy its existence. This instrument became particularly celebrated in Holland, under the name of the Roonhuysian secret; and was reckoned so necessary to a successful practice of midwifery, that no reputation could be gained by any one, as an accoucheur, without being in possession of it. When published, it was found to be nothing more than the lever; the use of which, though proper at times, is still very much limited.

CLXXI. The principle of its action consists in the detrusion of the presenting part from under the pubes into the hollow of the sacrum; by which the resistance of the bony space being taken off, and the head confined only by the dilatable soft parts, it comes soon on the occurrence of pains, which are excited by the irritation of the vectis continuing to be expelled. Thus it acts in two ways:

1. As altering the real position of the presenting part; and,
2. As a mechanical stimulus, producing an increased uterine action.

CLXXII. The method of using the lever is simply this. Let the hand be introduced as high as possible between the presenting part and the pubes; on it the point of the lever is to be directed, till it reaches so high, that the concavity of its blade is properly applied on the convexity of the occiput. The hand directing it is then to be withdrawn, and an attempt made, by moving the handle to bring down the presenting part; while the other hand, in order to assist it, is applied to draw forward that part of the head situated at the sacrum.

CLXXIII. On this instrument it may be remarked, that before its publication as the Roonhuijsian secret, it possessed a degree of credit equal to the greatest discoveries; but no sooner was it made known, than it lost greatly of that reputation it had formerly acquired. The simplicity indeed of the contrivance, and some inconveniences that appeared to attend its application, were the causes of this change; and the forceps seemed, therefore, an instrument more deserving attention, as well as more capable of improvement. Thus, from the

time the forceps came to be employed, most of the writers on midwifery have entered into a comparison of the relative advantages attending the use of each.

CLXXIV. The objections urged against the lever are chiefly on account of its fulcrum, or rest in action, being on the pubes; as its power, if sufficiently strong, must be proportionally exerted against the urethra, or bladder of urine. On this account, many accidents have been known to succeed its application; and several practitioners have directed its being introduced, on the contrary, from the side of the pelvis, or along the surface of one of the ischia; but in this situation it cannot act with the same advantage, as the resistance to the passage of the head is chiefly from the transverse diameter of the pelvis.

CLXXV. The objections thus urged against the lever we contend have arisen more from practitioners when employing it, not attending to particular circumstances in its form, size, and application.

CLXXVI. With respect to its size, the original Roonhuyfian one was too small, and on that account pressed entirely on the situation of the urethra, not being sufficiently expanded to rest upon the more distant parts of the pubes. It was at the same time entirely solid, so that it could not avoid injuring the part on which it pressed. We would, therefore, recommend that its breadth be pretty considerable, that its blade should also be hollowed for the greater part, so that a sufficient space may be allowed for the safety of the urethra; which, if the practitioner is attentive in his application, will escape entirely being compressed by the instrument.

CLXXVII. In regard to its form, its blade should possess a greater curve than the forceps, so as to be applied accurately to the convexity of the occiput, that it may not slip after being applied; for it is generally more difficult to introduce it than the forceps, the space being more confined, and this difficulty is even increased by its curved shape: for this reason the late Dr. AITKIN has constructed what he terms a living lever, which is introduced straight, and, by turning a screw, it then receives the proper curve, which adapts it to the presenting part; but the fault of this instrument is, that what advantage it possesses over the other in facility of introduction is counterbalanced by its proportionate want of power; for where much force is required, it bends too readily, and thus easily loses its hold, requiring a new introduction.

CLXXVIII. As the chief objection arose against the lever, from its rest being on the pubes, modern practitioners have endeavoured, by means of a hole at this part, through which a piece of string is fastened, by pulling it down here with one hand, while the other is applied to the handle to lessen its pressure, and thus avoid the consequences which its use, according to the former method, produced. It is with this improvement that it is, at present, much employed by the London practitioners.

The length of the lever is also a circumstance, in order to its successful application, requiring attention; for if too short, its power is not sufficient to bring down the head; and the longer, therefore, it is made, the more successful will its application be found.

CLXXIX. For these reasons, we consider the lever as, in many cases, a very useful instrument, and as by no means deserving that indiscriminate censure it has received from many authors. Its application would certainly be by no means proper in high cases of distortion, neither will it succeed where the presenting part is still high, and not at least an inch within the pubes; but in those situations where the head has descended low, where the pelvis is well formed, and where the labour is protracted, chiefly by the absence of pain from the exhausted state of the patient, and some rigidity of the soft parts, it is an instrument better calculated for delivery than the forceps, as it can be used even without the knowledge of the patient; and its action may be even increased by changing her posture, or placing her on her knees, while her arms are extended round the waist of another person seated for this purpose.

2. *Forceps.*

CLXXX. From the lever, we come to consider the second instrument, the forceps, which has been more generally used.

The first idea of the forceps seems to have been nothing more than a double lever, or an additional blade to the former, if we may judge from the manner in which directions were given to introduce them,—which was, with one blade to the pubes, and the other to the sacrum. The first who brought them into general use, if not their original inventor, was Dr. CHAMBERLAIN; but the particular cases to which their application was

proper were not justly determined by him. On this account they were too indiscriminately had recourse to, wherever difficulties occurred. This we find confirmed, by the instance of their failure in the hands of CHAMBERLAIN himself, related by MAURICEAU; which led this author, who was entirely unacquainted with them, to reject them as a very useless invention. Dr. CHAPMAN was the first who gave a plate of the instrument; and, by this means, submitted to the decision of the public what had hitherto been concealed in particular hands as a secret.

CLXXXI. Before the invention of the forceps, the applications had recourse to, on the same principle, were different kinds of fillets; but these were so difficult in their application, that only a few practitioners, their inventors, could make use of them. Afterwards, when the forceps began to be first known, but when practitioners did not excel so much in their use as they have done since, and of course bad consequences attended their application, many endeavoured to supersede the necessity for them, by different methods of manual assistance; particularly Dr. DAVENTER and Sir FIELDING OULD.

CLXXXII. Dr. DAVENTER's method consisted, on the head's descending very low, in the introduction of the left hand into the vagina, towards the coccyx; the woman being previously laid on her left side, so that no pressure against these bones might take place; and in the time of pain in thrusting back that bone, to admit of the enlargement of the passage, which was to be continued till the head advanced so far, that the other hand could be applied to the pubes, to assist in its extraction.

CLXXXIII. OULD's method differed but little from this of DAVENTER. Instead of introducing the hand into the vagina, to force back the coccyx, which both these authors seem to have considered as the chief cause of protraction in such labours, OULD recommended the introduction of the thumb into the anus, and fixing it on the point of the coccyx, while the fingers of the same hand are applied to the lower part of the sacrum, and thus a counter-pressure to the thumb is formed, and the coccyx pulled out as far as necessary. When the head is still farther advanced, the fore finger is to be introduced in the same way with the back of the hand, towards the sacrum; and being thrust in as far as possible, on bending it, it may be fixt under the child's jaw bone, near its articulation with the cranium, and thus, along with the mother's efforts, some assistance may be given to forward the delivery.

CLXXXIV. But all these expedients will appear to every one conversant in practice inadequate for the purpose intended; while, if the exertions made on these parts are sufficient to have any effect, they must do mischief. On this account they are now entirely laid aside, and can no way supersede the use of the forceps.

CLXXXV. As the utility of the forceps came to be established, practitioners soon attempted to render them more complete, and this they did in three ways:

1. By lessening their original size.
2. By rendering the junction of their blades more easy when applied; and,
3. By giving them a particular curved form. And in this way a variety of kinds have been invented, in

which more ingenuity has been often displayed by the inventors in their construction than real practical knowledge.

For different figures of them the works of the several authors may be inspected from the time of Dr. CHAPMAN, who gave the first plate of them to the present period, when the rage for alteration in this way seems to have abated; and the only ones necessary in modern practice are the improved ones of Dr. ORME, and the long ones of Mr. PUGH.

CLXXXVI. Without entering upon the comparative merit of the different kinds invented by different practitioners, it may be observed, that one who knows how to deliver with the forceps may deliver with almost any kind that can be applied, whether straight or curved; but, at the same time, in the form of an instrument for any particular use, we should take advantage of every circumstance in adapting it to the shape of the parts to which it is to be applied, as well as in attending to its general form or principle.

CLXXXVII. From these general observations, we proceed to enter upon the particular method of using the forceps, and the situations of labour to which they are most applicable.

In the first place, being merely artificial hands, the use of the forceps should never be concealed from the patient, and the appearance of them will always be rendered less alarming if they are covered with leather. The danger of communicating infection, commonly remarked, is little to be dreaded; and they do not by their

found occasion that uneasiness to the patient which otherwise cannot be avoided.

CLXXXVIII. Though the natural presentation of the head is with the face inclining to the sacrum, and occiput to the pubes, yet, as we have seen in the case of protracted labour, this does not always take place. Hence the directions for the use of the forceps must vary somewhat, as adapted to the particular situations of presentation; and these have been reduced to three different kinds, or what have been termed varieties, of forceps cases.

CLXXXIX. The first case to be considered is the natural presentation, and the symptoms here are, "the head having descended low down into the pelvis, so as to press somewhat against the perinæum; the head itself elongated into the conical form, and discovering more or less a soft tumour on the presenting part; the strength of the patient exhausted, as marked by the state of the pulse and general appearance."

CXC. Authors, in mentioning the proper time for the use of the forceps, have specified a certain number of hours for the patient being in labour, after the complete dilatation of the uterine orifice, and evacuation of the waters. This time has been generally stated to be from 36 to 48 hours; but it is by no means a just method of ascertaining when the forceps are indicated, as many women will suffer as much in a few hours as others in as many days; and it is therefore the present state of the patient, with a consideration of the former progress, and force of the labour, that is to determine our conduct. For the head may be 48 hours in the pelvis,

where the detention arises merely from weakness, not any real distortion, and yet the child be delivered naturally. At the same time, the longer the forceps can be deferred the easier will be their application.

CXCI. The cessation of the labour pains has also been regarded as a mark of the proper time for the application of the forceps; and that, while they continue, we should not have recourse to them. But this rule, though proper in cases where from early exertion the patient becomes exhausted, yet will by no means apply in general: for, though long suspended, they come often to be renewed with success.

CXCII. Of forceps cases, perhaps more than one half occur among women in low life, where exertions are generally too early employed to expedite delivery; and where the strength comes therefore to be soon exhausted, while the head coming to be rivetted on some of the projecting parts, from the over straining of the patient, it does not elongate as where a more gradual descent of it at first takes place.

First Forceps Case.

CXCIII. The head then being at the lower edge of the pelvis, the presentation natural, and the symptoms mentioned (CLXXXIX) indicating the use of the forceps, they are to be employed according to the following directions.

1. The state of the presenting part is to be accurately ascertained, and the situation of the ears of the child; over which the blades of the forceps are to be directed, as giving the most proper hold, carefully attended to.

2. In applying the blades of the forceps, the hand must be introduced by the lateral part of the pelvis, to direct them; and it has been recommended to be carried so high as to touch the ear of the child, over which the blade is to be past. This rule, however, though generally inculcated, cannot always be put in practice, for the space of the pelvis, being rather deficient, cannot easily admit the hand of the operator for any way. Nay, there are some cases in which the forceps are used where the hand cannot be admitted at all, and where the blade itself can only be insinuated in the time of a pain, when the situation of the presenting part is a little altered. Besides, in a proper forceps case, like the present, the os uteri is so far retracted, that there is little or no danger of including any portion of it in the hold; and the introduction of the hand so high gives the patient the most sensible pain, even greater than what attends the rest of the delivery. On this account the hand should be introduced so far only as can be easily done.

3. Previous to attempting the introduction of the blades, it has been recommended by practitioners to spend some time in the dilatation of the external parts; but their contraction is what we are to expect, and which is not to be considered as any obstacle to the delivery; for, though they are naturally elastic, they yield to the dilating power as the head advances in its progress; and any previous attempts to make them yield more readily, except merely to introduce the blades, is useless; for, as soon as the dilating power is withdrawn from their natural contractility, they will regain their original state. Hence those practitioners who recommend a particular time, as twenty minutes, or half an hour, to be spent in dilating the parts, as they call it, may be accoucheurs, but not physiologists, as they at the same time give much

fruitless pain to the woman, which might have been avoided; nay, in all those cases of natural labour, attended by midwives who are very fond of this practice, and of making always attempts at dilatation, instead of more space being gained from the dilatation, the parts become rather more contracted, and occasion greater efforts from the propelling power, to overcome the morbid contractility and inflamed state they hereby acquire.

4. In introducing the blades, the left hand one is to be introduced first, and, in introducing it, attention is to be paid to the different axes which the vagina and pelvis form. On this account it is to be pushed first a little backwards, and then directly upwards, keeping the blade closely applied to the surface of the head, and bearing the handle as much as possible against the perinæum, to favour its direction through the axis of the pelvis; and it should be carried so high, that its locking part be at the os externum.

5. One blade being introduced, it must be kept steadily in its place by one hand, while the other is past to the opposite side of the pelvis, to direct the introduction of the second blade, which is to be past in a similar manner with the former, and the handles being then brought together, an attempt is to be made to lock them. If they unite easily at the locking part, the forceps may be considered as properly applied, and we may depend on our hold. In this case the blades should be at least an inch and a half distant from each other. If they do not readily join at the locking part, or if the handles come too close, they are improperly introduced, and should be withdrawn, as they will either slip on attempting the extraction, or injure the patient by pressing on parts against which they are not intended to act.

6. In locking the forceps, avoid inclosing any of the

soft parts; and, if they are properly applied, it will seldom be necessary to pass any ligature round the handles, to secure them, as directed by most authors.

7. When the forceps are once applied, the extraction should next be attempted, by pulling as much as possible in a direction backwards, or against the perinæum. If natural pains occur, advantage is to be taken of them, and their recurrence waited for, to facilitate the progress of the head, and no attempts are to be made in the intervals to overcome the resistance; but if no natural efforts take place in pulling, the greatest exertions should be used at first, as this action of the blades is chiefly then against the parietes of the pelvis. As it advances, and presses more against the soft parts, the exertions in pulling should be gradually lessened, and their direction should be also changed, or more forwards, observing always the axis of the vagina. For the same reason, towards the end, as the occiput begins to rise from the os externum, the direction of pulling should be almost entirely upwards to the pubes, to prevent laceration of the perinæum.

8. In the extraction, it is often long before the head yields in the smallest degree, and we may continue to pull for ten or twelve minutes before being sensible of gaining any advantage, but by persevering it generally yields at last; and when once yielding in the least we are certain of succeeding, as the difficulty is then generally overcome.

9. In pulling, care should be taken not to squeeze the handles together, as, by proportionally compressing the head, it is liable to kill the child, and we should bear therefore more upon the locking parts than the blades themselves.

CXCIV. After giving these rules, it is to be observed, that the chief difficulty in using the instrument is in ascertaining the proper situations to which it is applicable, and in introducing the blades so as to procure a proper hold ; for, in the extraction itself, there is little difficulty if the exertions are continued slowly and steadily.

CXCV. On the introduction of the forceps the patient generally complains a good deal of pain and cramp of the thigh, from the increased pressure which is liable to occur. These symptoms very quietly abate ; but, as it is necessary to show the patient that they do not arise from you, you should allow some time, before attempting the extraction, after the blades are applied.

CXCVI. The rules for using the forceps have been extended by many authors to too great a length, which is rendering the instrument much more complex than it really is ; for, if considered in its proper light, merely as artificial hands, there is no occasion for viewing their application as a subject of such difficulty.

Second Forceps Case.

CXCVII. From the natural presentation we come to consider the variety taking place where the forceps are employed ; or where, instead of the former position, the head, not having descended so far, the ears are placed to the pubes and sacrum ; or even, although having descended so far, the same position takes place, from the confinedness of the pelvis not allowing the head to make the necessary change in its descent. This position is

termed the Second Forceps Case, and here the instrument is frequently known to fail. To render its application however more easy, the posture of the patient should differ from that recommended for the natural presentation; for, by placing her on her side, it will be found easier to introduce the blade betwixt the pubes and head, which is the most difficult one to apply.

CXCVIII. Having placed the patient then in the proper position, you endeavour to carry the fingers of one hand so high as to get betwixt the symphysis of the pubes and the head, on which one blade of the forceps is to be introduced, keeping the handle towards the inside of the patient's thigh, and thus carrying the blade a little transversely. In the same manner, having introduced the hand on the opposite side, or betwixt the head and sacrum, on it direct the second blade, carrying its handle in the same position with the former; after which, let an attempt be made to lock the blades, when you will find if they are properly applied.

CXCIX. Before proceeding to the extraction, it will be necessary in this case to give the forceps a turn, in order to bring the head into the natural position, or hollow of the sacrum, and thus to take advantage of the dimensions of the pelvis. This, however, some authors consider as unnecessary; for the head turns gradually as it makes its progress through the pelvis; so that, though the forceps, when first applied, have their blades towards the pubes and sacrum, they will gradually turn to the sides of the pelvis, before the head is delivered; and the action therefore of the forceps must be first and chiefly with that blade towards the pubes, till it comes to a rest. As soon as the head falls into the hollow of the

sacrum it is then placed in the natural position, and the same rules are to be attended to as in delivering the first case.

CC. In these cases, if you fail with the forceps, as may happen, some practitioners have advised that you should still wait before having recourse to any further means, for the natural efforts may still perhaps, in the end, succeed. This opinion is no doubt dictated by humanity: it is not however a maxim of prudence, or what will guide most accoucheurs. Wherever you have recourse to instruments, you must deliver. If you fail, it is attributed to your ignorance; and on this account no practitioner should think of using them without he is certain of success.

Third Forceps Case.

CCI. Of forceps cases two other varieties still remain, which have been marked by authors:

Instead then of the face inclining to the hollow of the sacrum, we find it situated in the opposite direction, or towards the pubes. In this case, if circumstances arise, which render it unavoidable to expedite delivery, the blades are to be applied in the same manner as in the natural position, and the extraction is to be accomplished by bringing along the head in the same position in which it presents, without attempting to make any turns to alter its direction, as recommended by some authors. In this case, however, we shall find the forceps frequently slip, and it will be therefore prudent to avoid applying them here, whenever it is in our power.

Face Cases requiring the Forceps.

CCII. The last situation in which the forceps may come to be employed is in face cases. These we already observed are very rare, and, if present in the beginning of labour, may be altered according to the rules formerly laid down: but if the labour is advanced without attempting this alteration, and the head engaged in the pelvis, while circumstances urge the delivery, the forceps may be applied, with attention to the rules which have been already detailed; though in face cases, one blade of them, or the lever, may be successfully employed to alter the position; and where the patient is not exhausted, the delivery will then follow by the natural efforts alone.

CCIII. Some authors, as BAUDELOQUE, have enumerated an almost endless variety of forceps cases. That every point of the two diameters of the head affected by labour, or the cranium and face, may present, there is no doubt; but such a minuteness can serve no good purpose; for if the situations detailed are understood, the rules of delivery will apply to every one else.

3. Crotchet and Scissors.

CCIV. But where the pelvis is so contracted, that the introduction of the forceps is unsafe, or where, though introduced, the force required for extraction cannot be safely employed, the second method of delivery had recourse to by practitioners, and directed by an attention to the safety of the patient, is the application of

such instruments as, acting in a different principle from either of the former, by diminishing the size of the presenting part, allow it to be either afterwards expelled by the natural efforts, or, where these are not to be waited for, extracted by art.

CCV. Thus protracted labour may be divided into three degrees.

In the first, where the powers of nature, though slowly exerted, are yet ultimately equal to the accomplishment of delivery.

In the second, where the lever or forceps are required, but by which the life of the child is still preserved; and,

In the third, where the cause of protraction is such, that, by the contraction of the capacity of the passage, the head of the child is not permitted to pass unopened.

• It is this last we shall now attempt to examine.

CCVI. From examination then of the size of the foetal head, compared with the dimensions of the pelvis, allowing for the difference which necessarily takes place in different children, the smallest possible diameter to which it can be reduced by compression is about three inches. Hence every pelvis, the superior aperture of which is below three inches, cannot admit its passage without alteration of its size. This, then, may be considered as the standard measure; but though proper to particularise the exact limits, it must be allowed at the same time to be of very little importance in practice, as the state of the patient, and progress of the labour in a given time connected with it, direct entirely our treatment.

CCVII. Wherever, after the complete dilatation of

the os tincae, and rupture of the membranes, the head continues still above the brim of the pelvis, or descends only a little into it, with a soft tumour forming on the presenting part, while the bony space or bulk of it remains very high—so soon as the patient's strength begins to fail, that is, so soon as the pulse, countenance, and other appearances indicate extreme debility, and resemble those of a person worn out with disease, you are then authorised to have recourse to such means as will diminish the size of the presenting part, and allow it to pass, previous to which, by the introduction of the hand, you will have ascertained the exact nature and degree of the distortion.

CCVIII. The destruction of the child, which must inevitably take place, is the great obstacle to this mode of delivery; and it has been usual on this part of the subject for writers to enumerate those signs which distinguish its state in utero; for where dead, the obstacle to its performance is then removed. But if the necessity for this operation is once clearly indicated, what occasion is there for determining this. Professional duty must always rise superior to every feeling; and this anxiety to determine the state of the child before-hand shews that practitioners have often performed the operation when there was no actual necessity for it, being determined to this step merely by the apparent death of the child. But this conduct is never warrantable; and, without being unavoidably indicated, is never to be allowed, whatever the presumption may be. We shall not, therefore, as some authors have done, endeavour to undervalue the life of the child before birth, to render the appearance of this operation less dreadful. The loss of the child, in every case of this kind, is to be consider-

ed as a severe stroke; and, without attempting to alleviate it by such modes of reasoning, it is rather the task of humanity to regret with the parent the unavoidable necessity which urges it; but still to retain that firmness necessary to put it in execution. If the former reasoning is considered, by withdrawing the horror which should necessarily attend the operation, it is giving practitioners a pretext for performing it when there is no absolute occasion; or it is an attempt to blunt the feelings of the man, from a fear of his being incapable of executing his duty in such a situation;—on these accounts, Dr. OSBORNE's reasoning, however ingenious and plausible, must be condemned.

CCIX. The child we find lose its existence, either during the latter end of gestation, or in the progress of labour.

The symptoms which have been regarded as distinguishing it during the first period are,—

1. The sudden ceasing of motion, formerly strongly felt, and that commonly with much struggle.

But this symptom is attended with much uncertainty; for many women have little or no motion during gestation; even the action of some of the viscera occasions sensations to be felt that are easily mistaken for the motion of the child.

2. The second symptom is slight hæmorrhage from the uterus, when this accident takes place, and immediately departing; but this is by no means constant.

3. No sensible increase of bulk perceived from the time these symptoms commence; and a sense of coldness, particularly in the abdomen, communicated to the parent.

4. Putrid exhalations from the vagina in labour, with the discharge of meconium on the rupture of the waters, and the head from the time of being first touched, possessing a soft puffy feel. But even where these symptoms have all appeared previous to birth, the child has yet been delivered alive,—and therefore nothing is so unconfusive as deciding on this point; for though such symptoms afford a presumption, yet they by no means convey an infallible proof.

CCX. In the latter period, labour has generally advanced for some time before the death of the child occurs, as entirely depending on the degree of compression it suffers; and therefore the common symptoms of the want of motion and absence of pulsation in the fontanel cannot easily be trusted to; for,

1. Spasmodic affections, which happen in labour, may at this time be mistaken for the motion of the child; or the uterus, contracting rigidly round the body, may prevent any motion after the rupture of the membranes has once taken place.

2. When the labour has advanced, at which time the death of the child happens, a tumour being generally formed on the head, and the teguments thickened, the pulsation of the sinus cannot be felt; nay, even when supposed to be felt, the pulsation of your own finger, from the resistance of the teguments when pressed against the head, may deceive you, while symptoms of putridity do not occur here time enough to give evidence of this state.

Hence, all the circumstances insisted on by authors on this subject are at best fallacious; and till the child is once expelled, we have no certain evidence of its real state.

CCXI. A frequent effect of the death of the child during pregnancy is a morbid enlargement of the size of the head, and that either in consequence of putrefaction or disease.—Hence, even where the pelvis possesses its proper dimensions, it may be necessary to have recourse to this operation, to admit delivery.—When this enlargement proceeds from putrefaction, the whole of the body is generally emphysematous, and the same means which are had recourse to for the delivery of the head must be likewise employed in order to bring away the rest of the body. Where the head alone is affected, it is generally from hydrocephalus. Children under this disease are generally delivered without any particular assistance being required, the texture of the head being so softened by the contained fluid as to yield to the pressure taking place in delivery; but where the collection is accumulated beyond a certain degree, this does not happen, and the labour being protracted beyond a proper length requires immediate delivery.—This disease, it has been alleged, we can generally detect by the distance betwixt the sutures; but this in labour is impossible, as where any degree of pressure takes place the sutures are not to be felt, and this will the more readily happen in hydrocephalus, as, from the texture of the head, it yields much more easily to compression. It is only therefore from the state of the patient, and the progress of the labour, particularly its last stage in a given time, that our mode of treatment is to be directed. Hence it is a matter of little consequence on what the cause of protraction depends, provided the present circumstances indicate a necessity for delivery.

CCXII. After these observations, we come to consider the method of accomplishing this species of instrumental

delivery; and the instruments best adapted for performing it are the long scissars and crotchet.

CCXIII. Disproportion betwixt the head and pelvis, though known to the ancients as a cause of protracted labour, does not seem to have led them to form any just indication for removing it. How to account for this we are at a loss, for the invention of the long scissars is very modern. It would seem that they considered either the head of the child so soft as to yield on the application of force to extract it, without any diminution of its size, or that the bones of the pelvis would separate, to allow an enlargement for its passage. Hence their great object was to obtain a proper hold of the presenting part for extraction; and with this view hooks of different kinds, knives for making incisions to fix these hooks, and other instruments on a similar principle, came to be invented. In perusing different writers, numberless views are met with of such instruments.

CCXIV. The great point in every delivery of this kind is the diminution of the size of the part, before any such modes of extraction can be successful. For this operation, therefore, the long scissars and crotchet we consider as the most proper yet invented; and the blunt hook, though an assistant to the latter, and sometimes used for it, is almost never necessary.

CCXV. In forming the long scissars, they should be at least six inches in length. They should have stops to determine the depth of their perforation, and they should be no sharper in the points than what is merely sufficient for perforation. Their sides should be entirely blunted, and the more they act by tearing than by

cutting is preferable, as the bones of the head are thus the more destroyed. It is on this principal the instrument has been improved by Dr. DENMAN, and its application rendered safer.

CCXVI. The crotchet, again, was originally made straight; but it is now generally formed with a curve, first given it by MESNARD, a French accoucheur: but this is by no means so necessary, as modern practitioners always prefer its application on the inside of the head, within the opening; and this curve would rather seem to proceed on the idea of its application taking place, similar to the forceps on the outside of the cranium; nay, the curve renders it rather more difficult in the application. It should be also longer than it is commonly made; for the more of lever it possesses, when applied, it will be found the easier to extract.

CCXVII. Having then, from the state of the patient and progress of the labour, determined on the propriety of the operation, before proceeding to the steps of it, it is prudent to point out to the husband and friends of the patient the necessity that urges you to such a mode of practice, and to prognosticate at the same time an unfavourable opinion of its issue.

CCXVIII. The first step in this, as formerly detailed in directing the use of the forceps, is in adjusting the position of the patient. Much depends on this for the ease of the delivery. All authors have recommended it to be on the back, as in using the forceps; but by this position you lose a great deal of the advantage you might otherwise gain. In all cases of distortion, it was mentioned, it is only a small portion of the head that enters

the pelvis. Where the patient is placed on her back, your hand is introduced in an unfavourable manner to reach the presenting part, and you cannot get it sufficiently high without difficulty, to have a full command of it. But where the patient is placed on her knees and elbows you reach the head at once, the pelvis being placed in a direction more favourable to the introduction of the hand, and parallel with it. In these cases too, where the patient is on her back, in making your perforation, you unavoidably press more upwards, and consequently bear strongly against the symphysis. In the other situation you press more directly against every part of the pelvis, as being placed more horizontal, and not so much against any single point. This advantage has been taken notice of by the late Dr. YOUNG in a cursory manner; but he has not insisted on it so strongly as is necessary, and he confines it merely to a few cases, where he had failed by placing the woman in the common way. It deserves, however, to be more generally recommended, as much facilitating this operation; and unless the patient is so much exhausted as to be unable to bear an alteration of her posture, it should never be dispensed with.

CCXIX. Having thus adjusted the position of the patient, you next proceed to the operation itself, which is properly divided into two stages, consisting of—

1. The diminution of the head; and,
2. Its extraction.

CCXX. The first is generally the most simple. It is performed by introducing one hand laterally through the pelvis till it reach the head. On the direction of this hand the long scissars are to be introduced; and before

making a perforation, a soft part of the head is to be chosen, if possible, particularly the fontanel. If this, however, cannot be discovered, the scissars are generally sufficiently strong for perforating any part. When the perforation is once made, which should be for such a depth into the head, till prevented from passing farther by the stops, the hand that directed their introduction is to be withdrawn from the pelvis, while the points are prevented from doing any harm by retaining the scissars in the situation which they gained on perforating the cranium.

In order to make the opening large, the handles are then to be drawn asunder, for at least the extent of three inches, by which the head will come to be torn open; and by turning them in every direction, while their handles are thus extended, the cavity of the cranium will have its texture pretty fully destroyed. The handles are then to be brought together, in order to shut them, without changing the situation of their points; and the hand being introduced, to guard the latter, they are to be withdrawn, in the same cautious manner as formerly introduced. If the opening made by this perforation is not sufficient to destroy the texture of the head, a second perforation is to be made in some adjoining part of the cranium, and enlarged in the same manner with the former, so that the two may come to communicate. After the opening into the cranium is made, as the adhesions of the brain still keep it from fully collapsing, the latter are to be destroyed, by the introduction of a spoon, or any blunt instrument, within its cavity.

CCXXI. Though the introduction of the long scissars in making the perforation for the depth of their

stops is a general rule observed by all practitioners; yet in some cases, where, from the violence of the previous labour, and the degree of compression the head suffers, a large tumour forms on the presenting part, you are obliged to go much farther; and the best rule to know if you have entered the cavity of the cranium is by the quantity that comes to be effused by the destruction of its vascular texture.

CCXXII. After the opening is once made, before proceeding to extraction, all the loose bones must be carefully separated, which are liable to hurt the patient in the delivery, and the opening must be covered as much as possible by the remaining teguments of the head brought over it.

CCXXIII. Though it may not be necessary in every case to destroy entirely the structure of the head, as a small diminution of size may admit delivery, yet, as you are uncertain what difficulties may occur to the extraction, it is proper you should diminish it as much as possible at first.

CCXXIV. This, then, we consider as the first stage of the labour, and the only difficulty in this part is the getting properly at the head, for the diminution of its size is sufficiently easy. The next stage, however, or the extraction, is often more perplexing.

CCXXV. When the head is once fully opened, it has been recommended, as an improvement in modern practice, if the patient's strength at all permit, to allow the head to collapse, and to be expelled by the natural

efforts. This, perhaps, is carrying an attention to the efforts of nature too far, and rather tantalising the patient, after suffering so much. Besides, after operating so long as takes place on opening the head, if the child is not removed, the patient supposes it owing to some failure on your part. She becomes apprehensive; and the pains, for that reason, independent of the suspension they suffer from the operation, are very long, if ever they return.

CCXXVI. Instead of this practice, then, the crotchet should be immediately introduced into the opening, on the inside of the cranium, and fixt, if possible, on some projecting point, which may give it a proper security, and prevent its slipping, the foramen magnum being particularly recommended. When it cannot be fixt there, it is to be done wherever it is practicable, though it very often slips. Some practitioners have considered this as an advantage; for the head they tell you becomes more lengthened out; but if we reflect on the consequences that may arise from this slipping, we shall be induced to think otherwise; while, if the head is sufficiently diminished at first, there will be less necessity for trusting to such an advantage.

CCXXVII. In introducing the crotchet, it must be always guided in the same manner with the long scissars; and while pulling, the hand must likewise be kept in the pelvis, both to assist the extraction, and to prevent any danger happening from the accidental slipping of the crotchet. When slipping, it is to be withdrawn, the separated pieces of bone being removed, and introduced anew, in the same guarded manner as at first.

CCXXVIII. Proceeding on the practice here laid down, wherever there is space allowed for the introduction of the hand to open the head, there is almost no case but what you will succeed in, if you take time and are cool in your proceeding. It is also amazing what the parts, habituated to the previous pressure during the labour, will bear; and there is seldom much danger, after such deliveries, where no lacerations have taken place.

CCXXIX. In some cases of this kind, the whole bones of the cranium will be torn away, before the head will yield, or you can procure a proper hold with the crotchet; and even, when the head yields, the same difficulty that prevents its passage hinders likewise the progress of the shoulders; and, therefore, after the head has been completely torn to pieces, it has been found necessary to fix the crotchet under the axilla, or in the thorax, to procure the extraction. These cases, however, are more rare; but it shews that general rules will not apply in the use of instruments, and that the conduct of the practitioner must be directed by the circumstances of the case. The great point, in all such situations, is not to lose temper, and to lay it down, as a first maxim, never to forsake your patient, if once you begin to operate, till she is delivered.

CCXXX. After opening the head, some practitioners have advised the use of two crotchets, in the manner of the forceps, proceeding on the idea of their being fixed on the outside of the head; but if the application of one crotchet in this way, as was formerly the

practice, was found frequently unsafe, how much more must two be, applied in this manner.

CCXXXI. In describing the use of the crotchet, some authors have endeavoured to limit the time of a delivery by it to the space of two hours. Such rules, however, are ridiculous. Every accoucheur knows that he is often able to perform it in half the time; and, on other occasions, that it may require a much longer period. Besides, it is not to be supposed, that any practitioner will chosse to keep his patient a single minute longer in pain than he can avoid. This maxim, therefore, though probably just, at times will have very little attention paid to it at the bed-side.

CCXXXII. From the unavoidable cruelty that attends the use of the crotchet, in sacrificing the life of the child, different proposals have been made to supersede the necessity for it in future deliveries; and this has been attempted to be done in three ways, either—

1. By the management of the patient, during pregnancy, so as to prevent a complete evolution of the child, or retain it of an imperfect growth.

2. By a premature occurrence of labour, while its size is yet small; or,

3. By the enlargement of the pelvis itself, to admit its passage, of the ordinary size.

CCXXXIII. The first is attempted by frequent small bleedings during gestation, an abstemious regimen observed by the mother, and other modes of inanition. Such authors, however, as have proposed this method, have not reflected on two circumstances which shew

the inefficacy of such a mode of treatment. In the first place, the smallest and most debilitated women have frequently the largest children, which demonstrates that the growth of the fœtus does not depend on the state of the mother; and, secondly, the nourishment is derived from the placenta, or the temporary appendages of the uterus. Hence, it must be their state, not that of the general system of the patient, which must determine the increase of the fœtus; and their state it is not in our power to alter, while the debility induced by such a mode of treatment, during pregnancy, renders the patient incapable of bearing the fatigues of labour, or that method of assistance which may be necessary to the expulsion of the child.

CCXXXIV. The bringing on premature delivery has been often proposed, and, in some cases attempted, though not with that success which, from superficial consideration, we might expect. It proceeds on that observation of children frequently surviving, when born in the 7th or 8th month, while the ossification of the head is then so loose, as well as its size smaller, that it can bear a degree of compression at least one third more than at full time, and the patients have been known to recover equally well as after a delivery at full gestation. But if we reflect on this proposal, many objections may be offered to it.

1. In the first place, we cannot ascertain the exact period of gestation, and hence the period when this delivery may be properly attempted is uncertain.

2. The size of children, in different pregnancies, vary much in the same subject; and they are frequently born in the 7th or 8th month equally vigorous as at the full time.

3. The success of delivery, at a premature period, is opposed by several circumstances; for,

4. The extension of the uterus has not fully taken place, consequently a resistance must be formed by the action of the cervix to the action of the fundus, rendering the labour tedious and painful.

5. The early exclusion of the waters, with this view, before the uterine orifice has been in the least dilated, will increase the former difficulty; and,

6. The child itself, from the tediousness of the labour, and its own imperfect state, may suffer so much by the increased action of the uterus, necessary to effect it, as to terminate its existence in the course of delivery, while, to the patient herself, there is always danger of considerable hæmorrhage, which may render it necessary, for her safety, to hasten the delivery, without regard to the situation of the child.

CCXXXV. For the reasons then detailed, as the success of this practice, in the most favourable circumstances, is precarious, from our uncertainty of the size of the foetal head, and the exact degree of distortion in the pelvis, and as real danger for the most part attends it, it is a step that cannot, with any degree of prudence, be imitated; and though it may have succeeded in a few cases, they by no means deserve to be followed; or it requires a previous knowledge of the circumstances of the case, much greater than what can be usually acquired by the common attendance on labour.

CCXXXVI. Considering these methods as ineffectual to supersede the necessity for the use of the crotchet, an attempt has been farther made to enlarge the capacity of the pelvis with the same view.

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Operation of the Symphysis Pubis.

CCXXXVII. The separation of the ligaments of the pelvis in labour was an opinion long entertained by the first accoucheurs; and which, still to this day, with many modern practitioners, gains credit. The ancients considered it as depending on a general relaxation of the whole ligaments of the pelvis previous to labour. The moderns, who favoured this opinion, have confined it to the ligaments which form the junction of the pubes, and consider it as occurring during the efforts of delivery. Reflecting, then, on these circumstances, which were known to former anatomists, and particularly on the opinion of the separation of the pubes, Mr. SIGAULT, a French surgeon, first from theory, proposed that this natural separation should be extended in cases of distortion, by a division of the symphysis in time of labour. This proposal was first made to the Royal Academy of Surgery, but for some time rejected. Whatever cruelties might be exercised on the child, practitioners were hitherto averse of extending these to the parent; and while the invention of crotchets and instruments of all kinds met the approbation of the profession at all times, they hesitated giving a sanction to an attempt which threatened entirely the life of the mother. Mr. SIGAULT, an enthusiast in his discovery, and convinced of its practicability from his frequent performance of it on the dead subject, where he informs us no less than two inches of enlargement were gained, eagerly sought an opportunity of submitting it to the test of real practice. A case at last occurred of this kind. A woman, who formerly had had difficult labours, and been delivered of dead child-

ren, anxious to preserve her offspring, readily embraced a proposal, the danger of which, from the representation of Mr. SIGAULT, was trifling; while its success gave in future a prospect of more easy deliveries. The operation was accordingly performed, and a living child extracted. A space of two inches and a half was gained, according to Mr. SIGAULT's report, by the division; but the recovery was tedious, and shewed that the operation was not without danger. This had been formerly hinted at by the Royal Academy of Surgery, and to obviate it, experiments had been made by professor CAMPER, of Holland, on animals, where the division of the symphysis was completely healed in eight days.

CCXXXVIII. In spite of the tediousness of SOUCHOT's recovery, this operation was considered as a new improvement by the academy. Nay, they even went farther; and liable to extremes as they had formerly condemned it without trial, they now over-rated its merit on a very insufficient proof. The consequence of their applause was the conveying a favourable idea of the operation through many parts of Europe. Thus it has been performed upwards of twenty-five different times. But in the greater number of these cases, the proper indications for the operation were not pointed out; and the operation, therefore, was more a matter of choice than necessity, so that its merit was by no means proved by these cases.

CCXXXIX. This operation, when first hinted at by Mr. SIGAULT, he considered only as capable of superseding the use of the crotchet; but the success of SOUCHOT's case led him soon to entertain too high an opinion of it; and its merit was accordingly extended so far, as to be

considered as superseding the necessity for the Cæsarian operation, and capable of admitting delivery in any situation of distortion whatever. But it is only after some years that the true merit of an invention can be ascertained, when that enthusiasm is over that distinguishes the reports of its favourers, and when envy has no longer any interest to detract from its real utility.

CCXL. When this operation was first applauded by the encomiums of the Royal Academy, several authors appeared against it, actuated more by private pique than from a real estimation of its intrinsic merit. It became, indeed, at Paris a party work; and we can trust, therefore, less to the accounts of the French writers than those authors who have tried it in different other parts of the continent; and, from their observations and experiments, our estimate of the operation is as follows:

1. Even allowing that the superior aperture of the pelvis is enlarged by the division, it does not take place to that extent; as to admit the head to pass; where the pelvis is in any degree distorted, both as from the figure of the head it does not derive any advantage from a trifling enlargement of space, which, were it more circular, it would do, and also as the division cannot be extended far, without endangering the sacro iliac ligaments, and occasioning lameness.

2. Supposing it even adequate to supersede the use of the crotchet, the uncertainty of the life of the child, after the head has been some time compressed in the pelvis, at which period of labour only its performance is warrantable; and the consequences that may result from the operation, and which have appeared in all the cases of it hitherto very serious, render it an expedient

so unsafe, and at best precarious, that it can never but be viewed as a piece of wanton cruelty.

CCXLI. The method of performing this operation is very simple. It was done by SIGAULT, by dividing the teguments and linea alba, beginning at the upper and central part of the symphysis pubis, with a common bistoury; after which, introducing his forefinger as a direction, he cut through the ligaments and cartilage; immediately on the completion of which, the two ossa pubis, with a peculiar noise, spontaneously separated.

CCXLII. In Britain, this operation has happily never been performed; and that owing much to the early disapprobation of it by the late Dr. HUNTER, whose remarks tended to place its merit in a very low estimation, as a succedaneum for the Cæsarian-operation; and, in any other light, it is never to be thought of. The favourable opinion which authors first entertained of it arose from the reflexion that the most frequent species of distortion depends on the contraction of the transverse diameter of the pelvis at the brim, or from pubes to sacrum; and the division of the symphysis, therefore, promised, by removing this in part, to lessen the difficulty; but, though lessening it in part, in cases of high distortion, where alone this operation is warrantable, it is still entirely ineffectual for admitting delivery; and independent of this also in such states of the pelvis, its proper elliptic form becomes greatly changed, by which its relation in general, as well as at the place of distortion, to the head, is altered, when compared with the natural standard figure. It is an oversight of these circumstances which renders many still sanguine in their expectations from the performance of this operation.

CCXLIII. To favour this operation, the consequences of it also have been represented as very slight; but allowing that in one or two cases they were so, where-ever, on dividing the symphysis, the head then does not easily descend, a farther attempt must be made to extend the opening by the separation of the thighs, by which the adjacent parts of the pelvis must necessarily be more or less torn, or at least separated from their connexions, independent of the accidents that may happen in the division of the symphysis itself, by the incautious use of the scalpel. Hence will arise incontinence of urine, lameness, and other painful effects of this operation, which of themselves are sufficient to occasion its being rejected by every practitioner of humanity. Nay, allowing that the head can pass by the division of the symphysis, the soft parts, without the protection of their former bony connection, must suffer unavoidably from its descent, and that even to such a degree as to prove fatal.

The laceration of the urethra itself is one of those accidents which, to every practitioner of experience, cannot be too strong an argument against any operation of this kind, even on its most favourable circumstances. When happening at times after the use of the crotchet, from the acrimony of the urine such a degree of inflammation is continued, as prevents it from almost ever healing; and it is one of these opprobria of the accoucheur which is reckoned the most perplexing that is met with in the course of practice. In the present case, the inflammation is particularly increased by the exposure of the cavity of the pelvis to the external air, by which the surface of the wound, instead of shewing a tendency to unite, acquires the ulcerative disposition continuing to extend, while the inflammation of the adjacent

parts rapidly proceeds. An acute fever, as a consequence, is produced, which either proves fatal, or the parts, after a course of time, becoming callous, the effect of their state on the system in general gradually abates,—and the patient survives, reduced by the disease to the most uncomfortable situation that can be well imagined.

CCXLIV. When we examine the history of the different cases in which SIGAULT's operation has been performed, it is surprising to find one half of them on subjects in whom no real necessity for its performance occurred, and in whom, had time been allowed, the natural efforts would have been sufficient for the delivery. Nay, we find in the history of SOPCHOT's case, by SIGAULT himself, that he performed the operation previous to the commencement of labour,—a step, which even allowing the operation to be just at this period, is not warrantable; that he then introduced his hand into the os uteri, broke the membranes, and delivered the child by the feet. He does not mention any particular difficulty he met with in the extraction of the head; and as every practical accoucheur knows, that even in a well-formed pelvis the extraction of the head, in a footling case, is often troublesome, while the space acquired by the division is now ascertained to be very trifling, one of two things must have occurred here, either the child must have been very small, or the pelvis must have been very well formed.

With respect to the first of these, it is observed by several authors, that the child was uncommonly small; and in regard to the second, it is a known fact, that several of the subjects on whom this operation was per-

formed were afterwards delivered naturally; and consequently we are led, from the history of this operation, to infer, that obstetrical knowledge must either be in a very rude state on the continent,—or as this is not the case, that a strong prejudice in favour of novelty has misled the judgment of some of the first accoucheurs of the present day. The only writers who have favoured this operation in Britain have done it from theory, and from performing it in the dead subject, a situation where any force can be applied to extend the division; but as the enthusiasm for this operation has now ceased,—and it is as strongly reprobated by the accoucheurs of Paris now as it was formerly extolled,—it must sink soon into oblivion; yet it may be always considered as an ingenious attempt, deserving the applause of society, had its merit not been over-rated by the partiality of party, and carried farther than what humanity could warrant.

CCXLV. The late Dr. HUNTER, though early averse to this operation, and reprobating its general principles, has mentioned one situation, a proof of the very candid manner in which he had examined it, in which he supposes its performance may be of service.

This is in those cases where the distortion is so considerable as to render the Cæsarian operation unavoidable. In such cases, he imagines, if the division of the symphysis is early performed, so that part of the head, which, from the narrowness of the space, would not at all descend, is allowed to enter by this small enlargement, it may then be reached by the introduction of the hand, and the delivery completed by the use of the long scissors and crotchet. This, however, seems in a manner indi-

rectly favouring the operation; the impropriety of which Dr. OSBORNE has considered, in a late publication, with much justice.

Dr. OSBORNE's Improvement.

CCXLVI. Since the merit of SIGAULT's operation has thus come to be exploded, in order to have still an expedient for superseding the necessity for the Cæsarian section, the idea of which is always dreadful, an attempt has been lately made to extend the utility of the crotchet; and by an attention to the dimensions of the pelvis, and to the advantage that may be taken of these, hitherto not so much observed to establish its success, even in cases where, till now, the Cæsarian operation was deemed unavoidable. This is carrying it a step beyond what had been hitherto imagined practicable, the merit of which is due to Dr. OSBORNE. We shall first examine the principles of Dr. OSBORNE's practice, and then consider the fact by which it is supported.

CCXLVII. Every pelvis, Dr. OSBORNE remarks, the capacity of which falls short of two inches at the brim, has been considered hitherto as unavoidably requiring the Cæsarian operation to be performed. Being successful, however, in a late case, where the distortion was equally great, Dr. OSBORNE infers, that the Cæsarian operation, if a similar mode of practice is attended to in such situations, will seldom, if at all, be found necessary; and in the greater number of cases in which we have the history of its being performed, the crotchet might have been found successful, if employed in the manner he directs.

CCXLVIII. The first and leading circumstance of Dr. OSBORNE's practice is the early diminution of the head.

With respect to this, it may be observed, that in all cases of common distortion, where the crotchet is usually employed in practice, if this was attempted at the commencement of labour, according to Dr. OSBORNE's advice, there is much reason to believe, from what we meet with daily,—viz. succeeding deliveries being accomplished naturally, where the crotchet, in the same subject, had been formerly employed,—that the practitioner, to facilitate delivery for himself, would often sacrifice the life of the child, which might have a chance if delay was permitted, though appearances of being born alive should be against it. Where again the distortion is still more considerable, and does not exceed the dimensions reckoned necessary for the Cæsarian operation, though the early opening of the head may be more allowable; yet still some objections offer against it.

The great difficulty to the use of all instruments is where the hand is not allowed to be their guide; either from the space being too confined for its introduction, or the head being too high to be reached by it. In a pelvis, of the kind described by Dr. OSBORNE, if you begin the diminution of the head at the commencement of labour, you have both these difficulties to encounter; while the head, from its very moveable state at the time, though somewhat retained by compression of the abdomen, is very apt to slip on attempting the perforation from your instrument. If then you delay till the labour is somewhat advanced, and the pains, which are uncommonly strong at first in these cases of extreme

distortion, have pressed part of the head a little within the pelvis, it is then secured; and though you have not the advantage of the introduction of your hand to guard the instrument, you can still make the perforation with more safety.

The reason urged by Dr. OSBORNE, that by this means, before the extraction be necessary, putrefaction of the child's body, rendering it softer and more compressible, will take place, by no means deserves much attention. Every practitioner knows the great difficulty in every labour depends on the delivery of the head. Our chief aim then should be, to render the delivery of it as easy as possible; and when once we are in possession of it, we have it always in our power to deliver the body in any situation.

CCXLIX. The second circumstance on which the success of Dr. OSBORNE's practice depends, is the total removal of the cranial bones, previous to the extraction; so that the base of the head alone remains to pass through the pelvis. It is certainly proper, in every case where it becomes necessary to open the head, that its size be completely diminished; but, in cases such as Dr. OSBORNE describes, I must confess it will be no easy matter to do this, and much more so at the commencement of labour, as Dr. OSBORNE directs. The principle however on which he proceeds is very just; for if, as he reports, the whole cranium can be in such circumstances removed, and the base only allowed to remain, the bulk of the head here will not exceed an inch and a half; and by taking advantage of the dimensions of the pelvis, in bringing along what part of the

head remains, we shall be able, in very unfavourable situations of distortion, to effect delivery.

CCL. The third circumstance recommended by Dr. OSBORNE, as essential, is the period of time intervening betwixt the diminution of the head and the extraction.

This has been recommended of late years in all crotchet cases; and by it, indeed, a chance is given for the head descending farther into the pelvis; and it is more with this view, than that a putrefaction of the child's body may take place, that it requires attention; for in the longest time which can be allowed for this process, it will be insufficient, as the body of the child is firmly compressed by the uterus, and the exclusion of the air, the great source of putrefaction in these cases, takes place in a great degree.

CCLI. The last circumstance inculcated in Dr. OSBORNE'S practice is an attention to the direction of the head, when opened, in passing through the pelvis. This is to be considered as a real improvement, and of which much advantage should be taken in every case of distortion; for since the base of the head, when diminished, measures only one inch and a half, and since the greatest width of the pelvis at the brim extends betwixt the ilia, if the head, when lessened so far, has its base turned to one side, thus introducing its smallest diameter betwixt the pubes and sacrum, so as to pass entirely laterally, the extraction will come to succeed, though not to be accomplished in the usual way.

CCLII. Such are the principles of Dr. OSBORNE'S practice in extreme distortion. His method is certainly

an improvement, and shews to what lengths a knowledge of the dimensions of the head and pelvis may be applied, with a view to overcome difficulties in labour; yet the cases requiring such a mode of practice will be so very few, that perhaps the chance of the patients will be equally great by the Cæsarian operation as by the crotchet; and it is only therefore avoiding the appearance of cruelty, while we have reason to believe the issue will be much the same. In proof of this you will find, on perusing Dr. YOUNG's Lectures, several cases where, though the limits of the pelvis were not so small as those mentioned by Dr. OSBORNE, yet, from the violence necessarily employed, even by that experienced practitioner in the delivery, the patient did not long survive. Hence, we must conclude, though Dr. OSBORNE has been lucky in the cure he describes, yet it by no means admits such a general application of the practice as he would wish to inculcate.

CCLIII. One thing must strike every practical accoucheur very much, on the perusal of Dr. OSBORNE's essay,—the ease with which he decides on the dimensions of the pelvis, in the case which is the subject of his practice. Now, in examining the pelvis, we can judge only from three circumstances:—

1. From the space the fingers possess when introduced.
2. From the portion of the head entering the pelvis itself.
3. From ascertaining the dimensions of the presenting part, which passes through the pelvis in the extraction.

With respect to the first, if the fingers, when intro-

duced, are not retained in the same state after being brought out, you can only guess at the dimensions, not fully ascertain them. Even the portion of the head entering the brim is a bad rule, as the degree of ossification will occasion it to vary, at different deliveries, in the same patient. The last, therefore, or the dimensions of the presenting part, that has past through the pelvis, is perhaps the most certain; though circumstances in the head itself may occasion difficulties, while the pelvis itself is not so much distorted as we would be led to imagine from these difficulties. The best proof of our not being able to ascertain exactly the dimensions of the pelvis, during delivery, may be drawn from the different reports of authors on the operation of the symphysis, on the space gained, where the dimensions of the pelvis, previous to the operation, were apparently much the same; and hence too we cannot be too delicate in forming a judgment of the conduct of any practitioner, where we are employed in succeeding deliveries; for a patient that has been delivered originally with the crotchet, and which the then circumstances may absolutely require, may be afterwards delivered without such assistance.

CCLIV. But in spite of all these expedients detailed, the Cæsarian operation may still, in particular circumstances, be found unavoidable; and, on this account, an acquaintance with its history becomes highly proper.

Cæsarian Operation.

CCLV. The situations requiring the Cæsarian operation, as usually pointed out by authors, are either—

1. Extreme distortion :

2. Rupture of the uterus; or,
3. Sudden death of the mother.

CCLVI. With respect to the first, where the superior aperture of the pelvis does not measure one inch and a half, and where the inferior opening also is equally distorted, so that no room is afforded for the introduction of the hand, the Cæsarian operation must be performed; which consists of a longitudinal incision through the teguments and substances of the uterus, with a view to extract the fœtus and its connecting parts.

CCLVII. The origin of this operation is uncertain, and its title we cannot even fix, whether derived from the manner of performing it, or from the first child, as contended by some authors, Julius Cæsar, to whom it gave birth. The first cases of it that we find recorded are in many respects so fabulous, that they cannot receive, at the present day, any very great degree of credit. From comparing, however, all that has been written on the subject, we have many instances well authenticated of its success; and on that account, however desperate a means of relief it may be, rather than doom the patient to certain death, we are authorised in trying it. In all the cases in which it has been performed in this country, it has failed, though conducted with every attention, in order to ensure its success. It has been much decried by many of the first writers on midwifery, who, from motives of humanity, as well as confirmed by its very general fatality, have endeavoured to prejudice mankind against its ever being put in practice. But, however just in part the reasoning of these gentlemen may be, it is the part of the physician in every situation, however desperate, to grasp at those

means which afford the smallest prospect of relief; and, as the death of the patient is in these circumstances inevitable, a greater chance is given where it is performed while the patient is yet alive, of the child's being saved, than where it is delayed till afterwards.

CCLVIII. The causes to which the failure of this operation may be perhaps reduced, are—

1. The exhausted state of the woman before its performance; and,
2. The irritation produced by the external air on such a large exposure of the internal viscera.

CCLIX. To avoid the effects of these causes then as much as possible, certain cautions have been recommended by some writers, which consist in—

1. An attention to its early performance, as immediately after the rupture of the membranes; but this we are by no means authorised to do, as we are uncertain how far the natural efforts may advance the head, and whether the crotchet may not succeed.
2. That no epidemic disease attack the situation in which the patient is confined.
3. That the uterus itself be in a healthy state previous to the occurrence of labour.
4. That the constitution of the patient be not broken down by previous diseases.

CCLX. From theory, it may be supposed that the fatality of this operation cannot arise from the wound of the uterus; for there is a great difference betwixt a wound made in it and any of the other bowels. It possesses naturally little sensibility, similar to all parenchymatous matter; and the moment it is freed of its con-

tents it returns to its natural state, or contracts with a power sufficient to shut up the orifices of the vessels, so that the hæmorrhage cannot be very considerable. Hence in the external incision the chief danger must be placed. It is surprising, when the general fatality of this operation is so conspicuous, we should have accounts, in the early writers, of its having been performed repeatedly on the same subject.

CCLXI. Previous to this operation, certain preparations are necessary to be observed; as clearing the bowels of the patient, that she may be as little disturbed as possible for some days after its performance, emptying the bladder of urine, and in general paying the same attention to the particulars of her state as where a principal operation of surgery is to be undergone.

CCLXII. To perform this operation more easily, the patient should be placed on a table, or a small couch, in a half lying posture. The abdomen is then to be laid bare, and all the apparatus necessary for the operation is simply a scalpel, pair of scissors, and a needle threaded to take up any vessels that may appear in the external incision. The place where this incision should be made has been disputed by authors, and it has been done in various situations, so as to be termed *lateral*, *transverse*, and *umbilical*. The lateral has been the most frequent, and the left side preferred, as the liver, if enlarged, does not here intervene. The incision is begun about half way from the umbilicus to the spine of the ilium; though the best rule is, without regarding the particular height at which you begin it, to leave so much room as to extend your incision for eight inches, which will make it sufficiently large for the extraction.

The reasons urged against this lateral incision are,—

1. That accidents are more liable to happen from an opening in this situation.
2. There is a greater depth of muscles to pass through than where it is performed at the linea alba.
3. At this part there is a danger of cutting some branches of the epigastric arteries, particularly if your incision is carried a little obliquely.
4. From the muscular substance divided here, retracting to a greater length, the intestines more readily push out; and,
5. The opening here is not exactly parallel with the longitudinal axis of the uterus.

CCLXIII. The transverse incision has been seldomer performed, and does not seem such a favourable mode of making the opening as the two others.

CCLXIV. The umbilical incision is considered by many authors to possess great advantages over all the others. It consists in dividing the linea alba from the umbilicus, almost to the ossa pubis, taking care, however, to avoid the epigastric artery. The superiority alleged to attend the division of the situation of the parts in this situation is,—

1. That there is less depth of substance to pass through.
2. That in the division there is little or no muscular substance, which is most liable to retract.
3. That the division of this substance, or the ligamentous, is less painful; and,
4. The uterus itself immediately appears at the opening, without any intervention of the intestines, which are here less apt to be protruded.

But, though such advantages are gained, other writers urge strong objections against the umbilical incision; which are,—

1. That the incision of the uterus here is more apt, after the operation, to be retracted, or not to be placed opposite to the external one, by which the retention of the discharge in the abdomen is favoured; and,

2. The situation of the bladder of urine, being at this place, favours very much the same inconvenience. On these accounts the incision should rather be carried a little above the umbilicus, than extended down fully to the ossa pubis. And hence, also, the lateral incision may be with equal propriety adopted as the umbilical; for more will depend, perhaps, on the management, than on the place of the operation.

CCLXV. The incision, wherever begun, is to be carried on slowly, till the peritonæum is laid in view; and, before attempting to open it, any vessels are to be taken up, and an effusion into the abdomen prevented as much as possible. On this account it will, perhaps, be proper, that some time should intervene before dividing the peritonæum. The rest of this operation is to be conducted with the same precaution as in hernia. A small perforation is at first to be made into the peritonæum; into it a finger is to be carried, and, taking it as a director, the opening extended as far as necessary, or the length of the external incision, with a pair of scissors. As soon as this is done, it has been recommended, before making the internal incision, by some authors, with much propriety, by the pressure of the hands of an assistant to circumscribe the situation of the uterus on each side; which will likewise have the ef-

fect to prevent in some measure the descent of the intestines.

CCLXVI. When the external incision is finished, the uterus comes distinctly into view, and its different colour from that of the contained parts readily marks it. There is little danger of confounding it with the bladder of urine, particularly if you are attentive to the state of the discharge before the operation. The uterus is to be opened in the middle of the surface which it presents; but this opening is to be very small, or only so much as to allow the easy introduction of the finger; for, from the dilated state of its vessels, if divided to any extent, fatal hæmorrhage would ensue, even before the extraction of the child. Immediately through this small opening of the uterus the whiteness of the body of the child is discovered; for the membranes are generally broken long before you perform this operation. The extraction of the child then is the next step, and it is necessary for this purpose that the incision of the uterus be now somewhat extended. In doing this, caution must be used to avoid the situation of the placenta, and, also, that no time intervene betwixt the incision of the uterus and extraction of the child, that its contraction may at once stop the hæmorrhage. Having introduced the finger then, with two or three cuts the incision is enlarged, and the child taken up as quickly as possible by the feet. If the labour, as is generally the case, has continued long before the operation is employed, part of the head will perhaps be locked in the brim of the pelvis, and it requires some force to disengage it. A finger may therefore be introduced within the vagina, with a view to push it up; though perhaps Dr. OSBORNE would

consider such a case as capable of being delivered by the crotchet.

As soon as the child is removed, the uterus contracts with great rapidity, and the placenta is at once forced off, which becomes extracted at the same opening. The operation is then finished, by the removal of any clotted blood effused in the process; and the after-treatment becomes the next, and most important, part of the business.

CCLXVII. From the state of the parts, two circumstances in the management here should direct our practice.

1. The first is to promote the adhesion of the divided parts; and,
2. The second to circumscribe the incipient inflammation.

CCLXVIII. To effect the first, an accurate re-union of the lips of the wound should be attempted. Different methods of doing this have been proposed. Sutures are the most certain method, and the quilled one has been generally employed here. The effect of all sutures however, we find, to be unavoidable pain, and increase of inflammation. Besides, the size of the uterus diminishes very quickly after the operation, so that, in the course of 24 hours, it is situated within the pelvis, or pretty much reduced to its natural state. Hence the danger of its being protruded at the opening is not so great, if attention is paid till this take place; and, therefore, the very principal reason for the use of the suture may be in a great measure dispensed with. The tegu-

ments also of the abdomen, from the distension of gestation, are so much extended, that their retraction will not occur to that degree as to render the application of a future necessary; and we have many instances where, after the operation, no future was applied, and yet no inconvenience arose from the protrusion of parts. To strike a medium therefore, or to confine sufficiently the lips of the wound, without giving that pain a future occasions, the application of bits of sticking-plaster may be proposed, which, if confining it for 24 or 36 hours, will be sufficient, as from the collapsed state of the parts the danger of protrusion is then over. When the sides are thus brought together, to favour their retention still more, the usual dressings, as employed in cases of large wounds, are to be had recourse to; and in this way a tendency to the re-union of the united parts, forming the first indication, is afforded.

CCLXIX. But the second circumstance, or the circumstance describing the incipient inflammation, is perhaps the most important,—as on the neglect of it, it is to be feared, the fatality of the disease certainly depends.—The spreading of inflammation in the present case has been considered as arising chiefly from the access of the external air into the cavity of the abdomen, which, in the operation, must take place in a certain degree. That the inflammation may be considerably increased by this, there is no doubt; but even in those cases where every attention was paid to its exclusion, the termination of the disease has been equally fatal as where no such cautions were observed. We cannot, therefore, attribute it so much to this circumstance as some authors have done,—especially when we know, that in peritonitis, where no air is admitted, there is often the same fatal termination as after the Caesarian

operation. To account then for the fatality of the present operation, we observe, that when any point of the surface of a cavity becomes inflamed, it possesses, independent of the admission of the air, a tendency to spread; and the consequence of this last is its termination, either in adhesion or suppuration. The former is the most favourable termination; and with this view, an accurate restriction of the divided parts, as formerly recommended, which favours adhesion, should be studied; for if once suppuration takes place from the exhausted state of the patient, and the long continuance of irritation on the system, in consequence of this process, death must unavoidably ensue. Yet the quantity of discharge which necessarily arises from such a large wound, as both that in the uterus and teguments, must almost always prevent adhesion; and it is therefore more this circumstance, perhaps, of the formation of matter within the cavity of the abdomen, or the extravasation of fluids, preventing an early termination of the disease by adhesion, that is to be considered as the cause of death, than the mere temporary admission of the air in the operation,—the one forming an accidental, the other a continued irritating cause; while, in the inflamed state of the cavity, the absorbents are unfit for removing any portion of the extravasated fluid before this termination takes place. Hence the necessity for the removal of every extraneous matter from the abdomen before the lips of the wound are placed in contact, and of occasionally removing the dressings, that a discharge from the abdomen, preventing the formation of pus, may arise; and though the admission of the air is thus endangered, it will be found less troublesome than matter formed in the cavity of the abdomen.—The late writers on this operation have paid very great attention to this last circumstance, and that

with a boldness, and even success, which shews that the admission of the air is not just so fatal as commonly supposed.

CCLXX. Having thus considered the steps of the operation, and its effects on the system to which its fatality is owing, we may remark that in Edinburgh it has been performed no less than six different times.—In the last of these but one the indications for the operation were wanting,—for it depended on the constriction of the soft parts, not the state of the pelvis. In the early accounts of its history you will find it frequently performed with a rashness, which nothing but ignorance could excuse. But though not indicated by distortion, accidents happen in the progress of labour, at times, which render this operation, as formerly remarked, necessary, and that chiefly with a view to the safety of the child :—

These are, *rupture of the uterus, and sudden death of the mother.*

CCLXXI. Rupture of the uterus is an accident, instances of which have occurred to every practitioner of extensive experience ; and some have even met with a very great number of them. The occurrence indeed of this accident we shall not be surprised at, when we consider the manner in which the action of the uterus takes place in labour. By its contraction, every part of its cavity is straitened, or forms a resistance to its contents. This resistance, however, is less at the orifice than in any other part, and the action of the other parts is likewise assisted by the abdominal muscles, and diaphragm, which render the effect of their contraction more powerful on the orifice.—If then the orifice is uncommonly rigid, or præternaturally contracted, so as to

possess an equal resistance with the action of the other parts, the labour either cannot proceed, or some part of the uterus that is weaker than the orifice, from the action of the other parts bearing against it, will give way, and a rupture of it then be produced. The place of the uterus, at which that most commonly happens, is the neck,—for the fundus is protected from the superior resistance it acquires, by the addition of the abdominal muscles, and other assistant parts, co-operating with it.

CCLXXII. The causes of this accident are all unknown to us, and we shall only repeat them as enumerated by authors.

1. The first set of causes is, those which produce difficult labour,—as distortion of the pelvis, and morbid contraction of the external parts.

But these we know occur in a thousand cases, without rupture of the uterus.

2. Violent and irregular contractions of the organ itself, as in case of convulsions; and if this symptom occur along with distortion, so as to prevent the termination of delivery, it certainly may have very powerful effect.

3. The excessive bulk of the child's head locked in the pelvis; and,

4. Accidental injury of the uterus itself, from strokes, &c.

These causes then occurring where the uterus is previously in a diseased state, may occasion this accident to happen; but we can have very little suspicion of it till it take place; and even admitting we have suspicion of it, we are not authorised, on such slight grounds, to at-

tempt immediate delivery, without other circumstances in the case indicate the propriety of it. Hence it is of more consequence to be able to ascertain the signs of this accident, when it has really happened, than to know its causes.

CCLXXIII. The signs commonly enumerated, are

1. The sudden disappearance of the head, or presenting part, formerly easily felt.
2. Excessive pain of the abdomen, fixed particularly in one place.
3. Remission of the throes of labour, formerly violent.
4. Reaching and flooding; and,
5. Weak intermitting pulse, with tendency to deliquium.

It is however the sudden disappearance of the presenting part, if once certainly felt, and the state of the pulse, we are more to trust to than any other,—for the others may all occur in the course of a natural labour, independent of this accident.

CCLXXIV. In the late Dr. Young's Lectures there are three cases mentioned of this accident, and in all of them the labour pains were uncommonly trifling, so that it could not be referred to any violent action of the organ, but was evidently the effect of disease.

CCLXXV. Where this accident occurs for the delivery of the child, the Cæsarian operation has been proposed; but some objections may be urged against it, from the state of the patient, and more especially as the child does not descend completely, for the most part, into

the abdomen; so that some of its members being entangled in the laceration, will allow the introduction of your hand to get at the feet, when the delivery may be more properly completed in this way. Besides, wounds of the uterus are mentioned by authors as not always fatal, and a greater chance therefore is given to the patient if the extraction is made in this way, than by a new incision through the abdomen. The delivery, however, must be very quickly made, as by keeping the wound extended the patient will sink in a few minutes from the internal hæmorrhage, and she commonly indeed dies under your hands. Hence it has been proposed by some authors, to delay any attempts at delivery till the death of the mother takes place, and that the Cæsarian operation should then be performed as quickly as possible. But however humane this practice may be, it is not giving her any chance of recovery; and when the smallest hopes remain, however unfavourable circumstances may appear, it is certainly the duty of the practitioner to take advantage of them, and to leave nothing undone which may contribute to save the patient.

Where the rupture again occurs in the more advanced progress of labour, or where the head is fixed in the pelvis as soon as this accident takes place, the forceps are to be employed to make the extraction as quickly as possible; and the hand being then introduced to bring off the placenta, you will be able to ascertain the extent of the rupture. But the great loss is, that it is only by the death of the patient the accident is for the most part ascertained; for the diagnostics are so uncertain, as either not to strike practitioners at the time; or the patients being attended by women, they are not sensible of the danger when the accident occurs.

CCLXXVI. To this subject, Mr. CROATZ has paid particular attention, and has endeavoured to mark those previous symptoms in the course of the labour that point out this accident as going to happen. He remarks, that in such women, the abdomen, upon examination, feels very prominent, and much distended, the vagina drawn upwards, and the orifice of the uterus uncommonly high. The pains at the same time are extremely violent, without any intermission, and the labour is very inconsiderably advanced by them. But all these symptoms may occur in the course of labour, without any such accident taking place; and therefore the enumeration of such symptoms serves only to frighten a practitioner in his attendance, and more especially if his patient has been in a delicate ailing state.

CCLXXVII. In these rare cases, termed *extra-uterine*, where the foetus is originally placed without the uterus, the Cæsarian operation is more properly indicated than in a rupture of the organ. But this subject is afterwards detailed; and as the symptoms of it are observed to be somewhat equivocal, it should never be performed but where nature seems to point it out, by inflammation of part of the abdomen, tending to abscess, when the enlargement of the diseased part will give an opening to the body contained, to leave the cavity of the abdomen.

CCLXXVIII. The last situation in which the propriety of the Cæsarian operation is pointed out, by sudden death of the mother, is a frequent occurrence; but it oftener takes place after delivery, than during the former period. It arises from the mother being worn out with previous disease, or from the former accident of the

rupture of the uterus occurring, and not being suspected, Wherever it happens, the Cæsarian operation, instantly performed, offers certainly the only means of saving the child. As yet it is not ascertained how long a child may survive the death of the mother; and till this is done, we cannot be too early in attempting the extraction. It is needless to perform it here with all the cautions which are necessary to be observed in the living subject. Some authors have alleged, that deliquia may at times impose on us, and that some space of time should intervene after the death of the mother, before having recourse to this operation. But deliquia very rarely occur in the course of labour, except in cases of flooding; and therefore there is a strong presumption of our not being deceived. Besides, the eye, in the case of death, very soon acquires always a dull collapsed appearance, and even the previous disease to which the patient has been subject will render it less doubtful. Though the sooner then we have recourse to the operation, the better; yet, even at the distance of many hours, we should not despair of saving the child,—for it has been successful, even at the distance of twelve. A prejudice in this particular case luckily prevails in its favour; and this is even extended to the greater part of gestation, especially after the sixth month, when it is thought always proper that the child should be removed.

CCLXXIX. On the whole, this operation is ever in the living subject a desperate resource; and, by Dr. Osborne's calculation, the proportion saved by it is only one out of ten, though performed by the first surgeons, and conducted in the most guarded manner. Every attempt therefore merits well of society, that aims in the smallest degree at superceding the necessity for employing it.

CLASS IV. *Manual Labours.*

I. Those labours we term manual, where, from some other part than the head presenting at the uterine orifice, aid, or manual assistance, is found for the most part necessary to effect the delivery.

II. That the head inclines naturally to be the presenting part in all cases we endeavoured to prove, from its shape, its specific gravity, and its acting most equally in dilating the uterus by an uniform and gradual pressure, which, where too considerable, admits, by the mode of its formation, some diminution, in consequence of a powerful resistance of the containing parts. At times, however, from some irregularity in the contraction of the uterus, or the consequent rupture of the membranes, before the head is engaged in the passage, particularly in distorted cases, where it does not easily enter, some other part of the child descends instead of it; and the varieties of such presentations, termed *præternatural*, may be reduced to four; the *footling*, *natal*, *transverse*, and *brachial*.

III. To extend the divisions of this species of labour farther, as many have done, is of no importance, from comprehending no variety in the management; and, though every point of the body may occasionally present at the uterine orifice, yet this information can serve no useful purpose, except where it directs to a difference of treatment; and, as many of the positions enumerated by authors are very rarely met with, it is burdening the memory to recollect the particular rules applicable to

them, while the four divisions mentioned are sufficient to convey a general knowledge of the methods that may be employed in every possible variety occurring.

IV. Manual labours, like the instrumental, may be properly divided into two stages,—the preparation for delivery, and the operation itself.

V. The former consists in,

1. Determining exactly the position of the child.
2. Rendering the state of the uterus favourable to the delivery; and,
3. Directing the position of the patient as most convenient for the operation.

VI. With respect to the first, all the signs of præternatural presentations before the rupture of the membranes are uncertain; nor can it be determined till we are able to know, by the feel, the presenting part. In all such positions too, besides the presenting part, we should endeavour to ascertain the form in which the child is placed in the uterus, by the external feel; for where placed in a longish form, the uterus contracts to the same, and forms a greater resistance than where it is placed in a more rounded figure, and where, of course, the hand can be more easily insinuated.

VII. In regard to the second, or state of the uterus, in most cases of manual delivery its relaxation should be procured as much as possible, and a suspension of action for a time attempted. The most favourable time, when the relaxation of the uterus is greatest, is immediately on the rupture of the membranes, before its contraction can take place round the body of the child; but where

we have not an opportunity of taking advantage of this time, an artificial relaxation of the organ must be induced before attempting the delivery. For this purpose a large opiate must be administered, and the delivery promoted, when the atonic state, or suspended action of the uterus, commences. This practice was first recommended by the late Dr. HUNTER. The dose must be very large, and even 120 drops are but moderate.

VIII. On the last circumstance, or position of the patient here, we may observe, that it must be varied in the two stages. In the former, where the introduction of the hand into the uterus becomes necessary, the side should be employed, or, which is preferable, the patient should be placed on her knees and elbows, by which the contents of the uterus will act less against the os tincæ, and thus give less interruption to the introduction of the hand. In the operation, however, of delivery, in all præternatural positions, the back should be preferred,—as the head, being the last part expelled, and the state of the labour not admitting time for it to take its natural turns, by this position the extraction is more in the power of the operator.—

IX. These then are the several circumstances to be observed in the first stage of this species of labour; and those of the second consist—

1. In the proper method of introducing the hand; or what is termed *turning*, with the view of rendering the position of the child favourable to expulsion; and,
2. When turned, in effecting the delivery by the lower extremities.

X. The rules for turning are very easy. The great

point is to know accurately the situation of the lower extremities before attempting it; and for this purpose the hand should be applied first externally, on the abdomen, to ascertain the position of the body, the parts of which will readily be felt through the teguments; and, when ascertained, you are then directed what hand to apply to get at the feet; for, if lying on the opposite side of the uterus, your hand, when introduced, must be again withdrawn, which is troublesome, and turned to the opposite side.

Footling Case.

XI. The delivery of the lower extremities, or what is termed a *footling case*, may be considered in this species of labour in the same light as natural labour in head presentations. Its management, therefore, should be well understood, and the chief difficulty in it consists in the extraction of the head. When the membranes are broken, at which time only one can ascertain this species of labour, if footling, it may be distinguished by the heel, and want of the thumb; and we should be accurate in observing these circumstances, as the hand is so similar in its general feel.

XII. This division of manual labour may be considered almost as natural; for, if the parts are well formed, patients in this situation are frequently delivered without any particular assistance. Among the ancients, the reducing the presenting part to the natural position, or the head, was the most general method. Failing of the head, they delivered by the feet, but reckoned it always a hazardous situation; and where they did deli-

ver in this way, they were exceedingly scrupulous that both should be brought into the passage before attempting extraction. In these cases, however, it is often difficult to bring down the second foot; and in attempting it, the patient suffers a good deal of pain, while the delivery can be completed with equal ease with one foot.

XIII. The management of this presentation is to be conducted as follows. The feet are to be allowed to advance as far as possible by the natural assistance of the pains; but when the head, descending into the pelvis, forms a resistance, a warm cloth is to be wrapt round the limbs of the child; while, at the recurrence of each pain, some force is employed in pulling gently from side to side; and when, by this means, shifting always the hold as the body comes to be protruded, the breech appears without the labia, as it is necessary for the extraction of the head, the back of the fœtus should be to the pubes of the mother, a turn greater or less, according to the state of presentation, must be given, in order to reduce it to this situation.

When the breech is delivered, the body being smaller, easily descends for the length of the shoulders; but a resistance arises from them, to lessen which it is proper to bring down the arms; and, as they are generally placed in a direction along the sides of the head, to perform this the body of the child must be supported on the arm of the operator, and carried as much as possible to one side of the labia. The other hand is then to be directed to the opposite side, where the greatest room for its introduction is by this means allowed, and the fore finger being placed over the shoulder, while the middle one and thumb are below it, the arm is to be

brought out by making a turn with it along the child's breast, and inclining its elbow to the coccyx of the mother. If, however, the fore finger cannot be past, when introduced over the shoulder, farther efforts must be used for bringing the body lower, before an attempt is made to reduce it.

After the reduction of one arm, the body of the child is next to be carried to the other side of the labia, and supported in a similar manner as on the former, on the other arm of the operator, while the hand that supported it on the first side is to be introduced to bring down the second arm of the child, which is now rendered more easy by the reduction of the first.

When both arms are thus brought down, and in doing it, that one (if a turn has been already made with the body to reduce the head to a proper direction with the sacrum) on the side from which the turn was made is to be preferred, the extraction of the head must be speedily attempted from the danger the cord suffers in consequence of compression at this part of the delivery; and this extraction is to be made by placing two fingers of one hand on each side of the child's neck, while the other supports its breast; a finger of which, if necessary, may be also introduced within its mouth; and the posture of the operator is then to be changed, for, rising up, he endeavours to disengage it, by pulling in a direction the reverse of the former, from sacrum to pubes.

XIV. Though this method in general succeeds, yet the same difficulties which hinder the advancing of the head in instrumental cases may detain it after the body in a footling presentation; and these difficulties in the

latter are even increased by want of time to accommodate itself to the passage. According, therefore, to the variety of causes which prevents its extraction, different means must be used for its delivery; and as it sometimes proceeds from contraction in the orifice of the uterus, the latter may, by the introduction of the hand, be dilated; or when, from the head not following the turn which is made on the protrusion of the breech, to place it in its natural situation, it must be altered by pushing it up, and bringing it down in a different direction. If this should fail, the forceps may be in such circumstances employed, and the former rules for their application will be equally proper here. But in some of these cases, where difficulties occur to the extraction of the head, it has been even separated from the body,—an accident that frequently happened to the early practitioners, who were not so attentive in observing the direction of its passing through the pelvis. On this account you find in most of the publications on midwifery a separate dissertation on this subject. In modern practice it never occurs, and would be considered as marking great misconduct in the operator. Should it unluckily happen, however, from the body being in a putrid state, the rules to be observed in extracting it may be made more simple than what are detailed in the authors who treat of it. If the dimensions betwixt it and the pelvis agree, when placed in the natural position, which you can do with your hands, the pains, if continuing, will expel it. But if no pains come on, it is then to be extracted with the forceps, a pressure being made on the abdomen in order to secure it during their introduction. Should, however, a great disproportion prevail between its size and that of the pelvis, the long scissars and crotchet must then be employed, after keeping it firm for their application by the former means.

This then comprehends the first species of manual labour. It deserves particular attention, as the rest are all reduced to it in the course of delivery.—The next we come to is the *natal* or *breech* presentation, which, after the head, is most frequently met with.

XV. This presentation is not to be ascertained till after the rupture of the membranes; for the presenting part, while inclosed, gives much the same feel with the head; nor is the knowledge of it of any consequence, unless the pelvis be distorted; for, if so, by not allowing it to pass, it must then be reduced to the former, or the footling presentation, and the saving some portion of the waters will render this more easily accomplished.

The expulsion of the meconium with the waters has generally been mentioned by authors as a leading sign of this presentation. It depends, however, on the descent of the body so far, before the rupture, that the abdomen is compressed by the pelvis; and hence a natal presentation may occur without this symptom.

When the membranes are ruptured, it is distinguished by the cleft betwixt the buttocks, and the parts of generation.

XVI. Two methods of delivery have been recommended in this case; and each claims the sanction of very respectable practitioners.

The one is, to reduce it as soon as ascertained, by pushing up the presenting part, introducing the hand into the uterus, and bringing down the feet to a footling presentation.

The other is, to allow it to proceed in the presenting position.

The only argument in favour of the former of them is, that you always occasion a painful and tedious labour, as the presenting part greatly exceeds in bulk the size of the cranium. This, however, is obviated by the structure of the presenting part, which admits more readily of compression than the cranium; and of births presenting in this way, we find also at least eight out of twelve delivered without any uncommon difficulty; and the only situations where it may fail, or meet with difficulty, is in the case of a first labour; while, in both footling and breech cases, if occurring in a first labour, it may be observed the children are generally lost, though in the same situation in a subsequent delivery no difficulty will occur. In all breech cases therefore, unless in a first labour, or where the pelvis is distorted, if allowed to advance the space required for the passage of the buttocks, will easily admit the expulsion of the head.

XVII. For these reasons detailed a general rule should be laid down in all natal cases, to allow the presenting part to proceed. As soon as assistance can be given, a finger is then to be insinuated under each groin, and gently brought forward in time of a pain, till the thighs come to be disengaged, when it is reduced to the former, or a footling presentation, and the rules pointed out for delivery in it will be equally applicable here.

Instead of the finger, where the groin is too high for its application, or the pelvis too narrow to admit it, many authors have advised the use of the blunt hook; but,

as you cannot be certain of the exact force the thigh will safely bear, and, if injuring it, you cannot know it *quickly* when you employ the instrument, the finger is on these accounts to be preferred.

XVIII. This then comprehends shortly the management of the two first species of manual labour, and a mixture of them often takes place by the presentation of one foot at the uterine orifice, while the other is laid along the belly of the child.

If the second foot cannot be reached easily, or is difficult to be brought down, the extraction is to be made with one, in the same manner as if both presented; for the birth of the second being effected by the protrusion of the breech, it is reduced to the first, or a common footling delivery; and in the variety of the two first species of manual labour nothing farther is required but to assist the effect of the pains in the manner recommended, allowing generally the presenting part to be expelled, and avoiding, before the arms are reduced, hurrying the delivery.

XIX. The third species of manual labour, or the *transverse*, comprehends any part of the body of the child, as the back, belly, or side, presenting at the uterine orifice; and the delivery here requires one preliminary step, not necessary in the former positions, of altering the situation of the child previous to the delivery.

XX. The membranes here are commonly ruptured very early; and, before their rupture, no part of the child can be felt; after, the cord is often found prolapsed, while the os uteri becomes less dilated than before, and the pains depart for some hours, frequently

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some days, returning afterwards with increased strength. The woman also, in such cases, it has been remarked, complains much of her side, as being affected with unusual pain.

XXI. The most common variety of this species of presentation is the belly; and, as the hand can be easily introduced, and the feet taken hold of, there is little difficulty in this presentation, as it is soon reduced to one of the former species.

XXII. The last species of manual labour, or the *brachial*, is justly considered as the most difficult to be met with. In this case the arm presents at the uterine orifice, and is pushed into the vagina for the length of the shoulder. It is easily known from the feet by the feel of the hand, particularly the length of the thumb and fingers, and, as the child cannot be expelled in this situation, it is necessary that the hand be introduced into the uterus to occasion the retraction of the presenting part, by bringing down the feet as most favourable for delivery. The difficulties, therefore, that occur to this operation, form a very important object of attention.

These difficulties depend on,—

1. The state of contraction in the uterus ;
2. The situation of the feet, or their distance from the uterine orifice ; and,
3. The presence of pains opposing the introduction of your hand.

XXIII. With respect to the first, we find the uterus, soon after the evacuation of the waters, acquire a rigid contracted state, unfavourable to extension ; and, according

to the situation of the body of the child, it assumes either a globular or longitudinal form, and it is much easier to turn in the former case than in the latter; though the contraction of the organ is equal.

XXIV. With respect to the second, or situation of the feet, they are generally, in this case, placed at the very fundus uteri; and there are very few arm presentations where it does not require us to go to the very bottom of the uterus before we can reach them.

XXV. With respect to the third, or the presence of pains, it is remarked in this presentation that the pains are at first generally very violent; and they are at the same time, from the irritable state of the uterine orifice, excited on the least attempt to introduce the hand, so that, to the natural contracted state which takes place after the evacuation of the waters, there is added a spasmodic contraction from its irritability.

XXVI. Before, then, attempting to turn, these difficulties we must endeavour to remove as far as possible.

As the contraction of the uterus is the principal one, it should be performed as soon as the waters flow off, which are a considerable advantage, particularly if any portion is retained in the superior part, as they keep the uterus in a slippery extensile state.

Before turning, also, the situation of the feet must be accurately ascertained, and this we do by considering the hand that presents, whether it be the right or the left, which is known by the direction of the thumb and palm, and also by the external feel of the uterus itself.

If spasm occur on attempting examination, the next step is the overcoming the irritability of the uterus, which we do by the exhibition of a large opiate; and we begin our attempts when it seems to take effect, and the patient is disposed to sleep.

XXVII. After having removed these difficulties, the patient being properly placed, as formerly recommended, we begin the operation by passing the hand quickly through the vagina in a conical form; for in passing here it gives pain, till it reach the os uteri. It is to be past into the latter betwixt the presenting part and pubes, as it is most easy to come at the feet in this way. It is to be then carried, when introduced, as high as possible, till a foot is reached, and an attempt is then to be made to bring down the latter into the vagina. When brought down, it is to be held by the hand introduced, till a piece of tape or ribband is past over the ankle, directed by the fingers of the other hand, which, when tightened, forms a noose, and is to be kept firm without the labia by being rolled about the palm of the same hand that directed its application, and the hand introduced is then to be past to the presenting part, pushing it up to the fundus, by which the child is brought round, and the presentation reduced to a footling case. If, when the hand is introduced into the uterus, the action of the organ is excited, we should proceed no farther till it cease; nor attempt to counteract its efforts, for there is then danger of the rupture of the uterus. If both feet can be laid hold of easily, we should endeavour to bring them down; but if we are in possession of one, we are always able to finish the delivery; and, unless the other is at hand, it is useless to give ourselves much trouble to search for it. When the feet are brought into

the passage, we then attempt the extraction, with one hand pulling by the noose, while the other takes hold of the feet. If the presenting part does not then retract, or the body turn round, it is owing to its being jammed in the superior part of the pelvis; and by passing the hand to the shoulders, and raising them up to the fundus uteri, the resistance to the extraction of the feet will be removed.

Before bringing down the foot we lay hold of into the vagina, we should be certain it is a foot; and it is necessary, therefore, to proceed slowly,—for if it prove the hand, the difficulty of introducing the hand of the operator into the uterus will be afterwards increased.

XXVIII. We are informed by many practitioners, that they have been often three hours before reaching a foot in arm presentations, after the introduction of their hand into the uterus. Though it is often a troublesome operation, if the preliminary circumstances recommended have been attended to, this will almost never happen, and the half of the time, if not less, will be sufficient. Such practitioners would seem fond of magnifying difficulties; and they may be asked, if they were so long, what they could mean by such conduct; for it could only proceed from two circumstances, either the position of their patient not allowing them to get the hand high enough, or they must have been constantly endeavouring to oppose the action of the uterus, forming the chief obstacle to their getting sufficiently high, and the organ being at last worn out by their efforts, they came to succeed. But would it not have been much better to induce this atonic state at once by more gentle than me-

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chanical means. Such difficulties, therefore, were much the effect of their own mode of procedure.

XXIX. But if this species of manual labour has continued to proceed for long after the evacuation of the waters, before an attempt is made to deliver, the presenting part comes down to that extent into the vagina, and at the same time becomes so impacted in the passage, that the introduction of the hand past it, in order to be admitted into the uterus, is not possible. In this case, then, an attempt is to be made by fixing the forefinger and thumb in the axilla of the child, in the form of a crutch, to push the shoulder towards the head, and the latter again towards the fundus uteri, so as, by degrees, to raise the body of the child till we have sufficient room.

XXX. In some cases, however, it is impossible to do this, or our efforts may be so violent as to prove fatal to the patient. It was formerly the custom in these situations, as they judged immediate delivery here always necessary, to remove altogether the presenting part, by wresting the arm from the socket, or fixing the crotchet in the shoulder, so as to accomplish the same end. This, however, is never allowable, and is to be rejected entirely from modern practice. Nay, when one arm was removed, they did the same to the other, then fixt the crotchet somewhere in the thorax, so as to bring down at last the lower extremities of the child; and, in this way, after much toil and separating great part of it, they succeeded in effecting delivery.

XXXI. But in such cases a new and more agreeable mode of practice is now recommended by the authority of Dr. DENMAN, and his observations form an import-

ant improvement in conducting labours of this kind. In arm presentations he observes, where the presenting part is impacted, and the action of the uterus very violent, so as to endanger the life of the mother if we attempt to turn, that the presenting part is pushed down till it can proceed no farther. It is then fixt, and, the action of the uterus continuing, the lower extremities which are moveable are pushed down by it towards the pelvis. As this takes place, the presenting part comes again to rise or be retracted, and, at last, the breech comes to fill up the uterine orifice,—the child turning, as he terms it, on its own axis, and coming at last to be completely delivered by a *spontaneous evolution*. In all cases, however, of this kind, from the violent action of the uterus to effect it, the children are expelled dead. Hence, it is only where we cannot pretend to save the child, where the introduction of the hand cannot be effected, or where, if introduced, the attempts of turning might prove fatal to the mother, this practice is to be trusted to; and, as the women themselves reckon turning in such situations of labour always necessary, this mode of conduct in the practitioner will seldom be admitted. Dr. DENMAN, however, has much merit in making the observation, as he gives us a resource which is both agreeable to humanity and the safety of the patient. Dr. DENMAN's observations have been also confirmed by the cases of some late writers.

XXXII. Such is the general treatment of manual labour (detailed from I. to XXX.). It is needless to extend the rules, as many authors have done, to too great length. The whole management consists in changing the position of the child when unfavourable, or turning, and afterwards in delivering by the feet.

In footling delivery the chief difficulty lies in the ex-

traction of the head, and the rules to be observed in effecting it are simply these:

1. If it does not readily yield, the force applied must be gradually increased till it is sufficient to overcome the difficulty.

2. In employing force, it must be uniform, commanded, and exerted at intervals.

3. If it does not descend with all the force we can safely apply, we must intermit, and give the head time to collapse.

4. When resumed, it must be exerted in every direction, backward and forward, and from side to side alternately.

5. When the head once begins to descend, the difficulty is overcome, and time may be taken to the rest of the extraction.

6. Though the head should remain hours in this situation, we should not have recourse to the use of instruments early.

CLASS V. *Anomalous Labours.*

I. By the last species of labour, or the *anomalous*, we understand all those, which, from being complicated with certain morbid circumstances, do not enter properly into the former divisions.

1. *Flooding.*

II. The first and most important in the arrangement of these is what has been termed *flooding-cases*: for every appearance of uterine hæmorrhage, after the fifth month of gestation, it is agreed by all practitioners, is to be considered as highly dangerous, the enlarged size of the ves-

fels threatening then, if continuing, the life of the patient. Nay, there are even some instances of death arising from this cause more early; but, as these cases are very rare, they lead properly to no general conclusion.

III. The appearance of these floodings is very various. In some they are preceded by or are attended with uterine pains; in others there is not the smallest threatening of their attack. Where the discharge is moderate, they have been known to continue three weeks, or even longer, without reducing very much the strength of the patient, or rendering delivery necessary. But in general their effects are more sudden, and the symptoms they produce very quickly alarming. Sometimes they are temporary, flowing for a short time, and then disappearing; when, after an interval, they return with increased violence. In these cases every attack, though apparently slight, is to be judged highly dangerous; and we are not to form an opinion where it frequently recurs from its apparent effects; for the patient, though seemingly not so much exhausted, generally sinks unexpectedly, especially on attempting delivery, and that without any alarming increase of flooding during the operation. Hence, in these situations, it should be begun early.

IV. The cause of uterine floodings in the pregnant state depends *always* on the *separation* of the placenta; and its situation in the uterus is the *only* direction we have, with respect to its remote cause, and the prognosis to be formed.

V. The natural situation of the placenta we find to be at the fundus uteri. The stretching of this part first

commences; and, by the time that a proper adhesion between it and the placenta has been formed, the extension of that surface to which it is applied has fully taken place. Hence the separation of this connection can only arise from certain causes increasing the action of the fundus, so as to influence the circulation between it and the placenta, producing, of course, a rupture of some vessels.

But late observation has shown, that the situation of the placenta is *not always* towards the fundus. It is often placed farther down at the neck, and even at the orifice itself. As the adhesion then between the placenta and contiguous surface is found in these cases unfavourable, where the parts have not received their extended state, this connection must come to be affected as they begin to stretch; and a *partial separation* occurring, flooding will ensue.

VI. From these observations, then, two different species of hæmorrhage in advanced gestation are to be remarked, which, by symptoms, we may ascertain.

In the former species it is generally preceded by *some active* cause, such as occasions abortion in the early state; and to this the patient herself commonly traces it.

In the latter, however, it occurs without *any previous* cause, as arising merely from the natural stretching of the uterus.

The former is generally attended with slight pain from the first appearance of flooding, which increases in its progress.

In the latter, pain never occurs originally, but only arises in the advanced stage, or is brought on by the attempts of the operator himself in delivery. The flooding is also less violent in the time of pain in the former, while, in the latter, it is increased by it.

VII. The first to whom we are indebted for any just observations on gravid hæmorrhages is Mr. Puzos, who remarks, that we should in general form a bad prognosis; for of those seized with floodings at this period, more than one half die. This, however, is to be attributed to circumstances of treatment as well as situation. But though Mr. Puzos observes, in a general way, that such floodings arise from the separation of the placenta, he has not remarked its difference of situation in particular cases, by which our prognosis is directed. This last circumstance has been principally enforced, and its application pointed out, by Mr. RIGBY, who remarks, that authors are divided with regard to the practice in such situations; for some, we find, advise in every instance immediate delivery, while others are for waiting till nature is nearly exhausted, and then for having recourse to the assistance of art. As in many cases, then, this method of trusting to nature is effectual, Mr. RIGBY wishes to fix some criterion, by which we may judge in what particular situations this is proper; and in what others, again, art is to be immediately employed. This, he thinks, is to be determined by our knowledge of the situation of the placenta; for where it is improperly attached towards the neck, or inferior parts of the uterus, as the action of the organ must always increase the flooding by increasing the separation, nature should never be confided in for the success of delivery,—but recourse immediately had, by art, to the

removal of the uterine contents. To detect then this situation of the placenta, the hand is advised, in every case of flooding, to be introduced within the vagina; and when introduced, a finger must be past within the uterine orifice, which, if carried up some little way, will ascertain whether the placenta be towards that situation. The passing the hand in these cases gives little pain, from the relaxed state of the parts.

VIII. When the situation of the placenta is thus detected, or finding from no marks of it within reach, supposing it occupies its proper place towards the fundus, the termination of the accident, in this case, is to be trusted to nature; which is done by enjoining strictly a horizontal posture; by cold applications to the uterine region; by refrigerants internally, in liberal doses, where the stomach can bear them; and mild nourishment in small quantity. If strong, and the flooding commences with considerable fever or pyrexia, arising evidently from an external cause, early venesection is likewise admissible.

IX. By this treatment, the hæmorrhage will often subside; and where yielding, the greatest attention is to be paid, that the patient do not soon return to motion, as a relapse is always endangered, and each succeeding return is to be esteemed more alarming.

X. When an improper attachment of the placenta is discovered, both from the symptoms mentioned (LI.) and also from examination itself, the evacuation of the uterine contents is the *only* means then to be depended on; the circumstances to be attended to, as necessary to its success, are—

1. The proper time when such an operation is to be begun.
2. The prognosis to be formed by the operator, before attempting it from examination; and,
3. The mode of delivery itself.

XI. With respect to the first of these, the attempting it early, or while no urgent circumstances enforce its necessity, is by most practitioners reckoned unadvisable. At the same time, it may be delayed too long. A judgment cannot be formed from the quantity discharged; for the appearance in this way, especially if on clothes, is very fallacious, and the real quantity may be very inconsiderable. We judge entirely from its effects on the patient; and unless seized with fainting, quick feeble pulse, indistinct vision, &c. few practitioners reckon themselves warranted to attempt it more early. It is a nice point, however, to hit the proper time, when it may be successfully performed; and this knowledge is only to be gained by frequent attendance on such situations; for many women will be much reduced, in whom, from peculiar constitution, there will be little tendency to faint; and others, who are naturally delicate and nervous, in whom the balance between the solids and fluids is very nicely poised, will faint very early, before any considerable quantity is lost. The pulse therefore must chiefly direct us; and it is better, where circumstances favour, to begin delivery too early, than defer it too long; and perhaps there are more patients lost from this last circumstance than the former.

XII. In forming a just prognosis of the event before delivery, we are directed by examination; and to this a good deal of attention should be paid. If the uterus

feel very soft and relaxed, though it shows the ease with which delivery may be effected, yet there is danger of its not possessing sufficient tone to contract itself, so as to stop the hæmorrhage after delivery. Hence, in a dissertation by Dr. DOUGLAS, of London, it is remarked that he never saved a case, where the os uteri, on examination, had too soft a feel, and did not give some resistance to his attempts of dilatation. There is, however, a considerable difference between that resistance, which is the mere effort of tone in parts, and that morbid rigidity which may be more properly arranged under disease. In this last case, or where the os uteri appears hard and contracted, preventing, without the greatest difficulty, any entrance to the hand, the prognosis formed may be even more unfavourable, from the increased difficulty of accomplishing delivery, than where it discovers the directly opposite state.

XIII. In regard to the mode of delivery, the last circumstance to be observed, there are *two methods* practised, which have both their advantages in particular situations. The one may be properly named *natural*, the other *artificial*.

XIV. To point out the propriety of the first, it has been observed by most experienced practitioners, that where pains, however slight, occur in cases of flooding, delivery is generally easily effected, and the patient survives the discharge, however considerable. On this observation Mr. Puzos has endeavoured to inculcate the propriety of imitating nature, and, as all hæmorrhages of advanced gestation are to be considered, when the separation between the surfaces has taken place, as passive, to reduce them, if possible, to an active state in

exciting uterine action. This is to be done in different ways:—

1. With a view to induce the commencement of labour; and,
2. When commenced, to accelerate its progress.

XV. The former is effected either—

1. By a sudden application of cold to the fundus, immediately inducing its contraction; and unless suddenly applied, it will have no influence.
2. By irritation of the os uteri, bringing into consent the rest of the organ. This irritation is performed by the introduction of a finger within the os uteri, and rolling it round for a certain time, repeating it at intervals, by the continuance of which slight pains come soon to be produced. But, in order to be successful, some circumstances are to be attended to.

XVI. The circumstances to be attended to, for the success of this operation, are:—

1. That the os uteri be not so far weakened, as to be incapable of receiving a stimulus, which is the case where the flooding has gone on to any extent; and,
2. As little or no violence is here employed, it may, with great safety, be early had recourse to. In half an hour the effects of this method are conspicuous, and we can determine if delivery will be in this way accomplished.

XVII. These then are the different methods of inducing a commencement of labour; and its progress may be accelerated by the application of the same stimulus to the os tincæ, where pains have naturally occurred, and are too weak to have much influence; or

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or as soon as the dilatation has a little advanced, it will be performed more effectually by the perforation of the membranes; thus evacuating the waters, and admitting a more general contraction of the organ. As soon as the waters are discharged, where the patient is not very much exhausted, the delivery is commonly very quick, and their evacuation therefore is a great point to be had in view in all cases of hæmorrhage; as even where the placenta is unfavourably situated, still the flooding is, for some little time, generally checked by it.

XVIII. The advantages that arise from this natural mode of delivery are very justly pointed out by Mr. Puzos, in his comparison of the natural and manual classes of labour, the other method recommended in this situation.

In all manual labours, or in order to change the position of the fœtus, the natural power of the uterus must be counteracted. In flooding cases, however, this power or action we already find too weak. Hence, after the placenta in these cases is removed from the efforts employed in delivery, joined with its natural weakened state, there is great danger of its not contracting at all, and of the hæmorrhage still continuing. In the other case, by merely assisting the natural efforts, its powers are increased, which can likewise, without any harm, be early begun, so that the patient here has a greater chance. As the contraction of the uterus proceeds gradually in this way to expel the child, we are also certain, on delivery, it is so far contracted as to stop the hæmorrhage; but unless begun early, it may be laid down as a rule, that the natural method cannot be trusted to. If in a first labour also, as we are uncertain

of the state of the external parts to admit delivery, its success is doubtful; and wherever difficult labours have occurred formerly from the confinement of the bony space, it would be highly reprehensible.

XIX. For these reasons pointed out, in spite of Mr. Puzos's observation, that a greater number of women die after delivery by the artificial method, the latter is to be preferred, as giving us the delivery at once in our power.

XX. The chief circumstances requiring attention in the artificial delivery, to render it here successful, are—

1. In conducting the different steps of it as slowly as the situation of the patient will allow; and,
2. In supporting the patient under it; for being attended with some degree of violence, the latter, in her weak state, requires to be rendered as bearable as possible.

XXI. With a view to this last circumstance, then, cordials should be liberally employed, as a temporary additional strength is absolutely requisite, even though in the interims the flooding should be a little increased. It is generally deliquium which, in this situation, proves fatal. The preventing it, therefore, for a certain time, till delivery is completed, is highly necessary; and even after delivery: for, as every increase of circulation must induce a primary increased action of the solids, the contraction of the uterus after delivery will be promoted by this very means.

XXII. The method of performing here the artificial

delivery, or reducing it to a footling case, whatever presentation may occur, is simply this :

Let the patient be placed in the usual situation of delivery on her left side ; or if a young practitioner, for the more easy access of the hand, she may be placed in the same way as in instrumental labours, on her back, with her thighs extended. A roller is then to be put loosely round the abdomen, and an assistant with some cordial is to be ready at hand. The operator, then kneeling before the bedside, introduces his hand lubricated, first gently stretching the os externum and vagina, and removing from the latter any coagula, with which it is generally filled, preventing his approach to the os uteri, and rendering it often difficult to be felt. When the os uteri is reached, let a finger be insinuated into its orifice, which will generally be found so open from its lax state as to admit its introduction. When once introduced, roll it round, so as to increase by its irritation the dilatation of the aperture, in consequence of which the rest of the fingers will come to be gradually admitted, and the hand at last pass into the uterus. When the hand is thus past, the foetus, with the inclosing membranes, will be found. Before rupturing them, let the presenting part, which will be easily felt, be turned to the *feet*, and, then evacuating the waters, let the feet be brought into the vagina. As soon as the membranes are broken, the flooding, from the contraction of the uterus, generally abates, and labour-pains, though perhaps trifling, commence, and there is then no occasion to precipitate the delivery, for a sudden evacuation of the contents of the uterus proves very often fatal. Let the operator, therefore, rest a little, and some cordial in the interim be administered to the patient ; while the roller round the waist is then to

be tightened, and the pressure of an assistant's hand applied also to the abdomen. The delivery is afterwards to be completed in the same manner as directed in footling presentations; and, after the extraction of it, time is to be allowed as usual for the contraction of the uterus and complete separation of the placenta.

XXIII. From what has been delivered on flooding cases, the conclusions to be drawn, are—

1. That whenever the pulse begins to turn feeble, with coldness of the extremities, and indistinct vision, delivery is then, perhaps, too late to save the patient.

2. Where the flooding is accompanied with some slight pains, these are to be encouraged; for the stronger or more active the action of the uterus, the greater chance there is of its contents being naturally expelled.

3. Opiates are never to be exhibited in cases of flooding, a practice often employed,—as, by weakening the power of the uterus in their secondary efforts, they favour the increase of hæmorrhage.

4. Wherever a flooding occurs, without the smallest previous pain, or any sensible external cause, delivery will, in the end, be found absolutely requisite.

5. Of flooding cases, we are to consider two-thirds, at least, as proving fatal.

XXIV. These floodings have been hitherto treated which precede labour. They happen, however, frequently during the progress of labour itself; and unless very violent, we should not attempt to expedite the delivery. They are ofteneft met with in tedious cases, towards their termination, and there is danger here of their continuing also after delivery. This circumstance should be attended to, and precautions taken.

XXV. Floodings, when not fatal of themselves in gestation, often lay the foundation of a number of maladies which affect the constitution for life. It is surprising, however, with women, how soon a loss of blood is repaired, and which in the other sex would have never been got the better of. The complaints which generally succeed profuse floodings are—

1. Violent complaints of the head,
2. Irregular uterine health.
3. Future abortions; and,
4. *Cedema* of one of the extremities, sometimes general dropy.

The first consists, generally, of violent pain or constant giddiness, and they are always worst in the night. They commonly last two or three months, unless the patient is of a nervous habit, and naturally predisposed to them, when they continue much longer. The only palliatives are time and opiates; for, as the constitution comes to be repaired by a generous diet, they gradually depart.

With respect to the second, there are instances of the patient being for years without the appearance of the menses, or subject to *menstruus albus*, which is always a very disagreeable complaint; and conception here never takes place till it is removed.

The remaining consequences of these floodings were formerly treated under their proper head.

2. *Convulsions.*

XXVI. The second division of this species of labour

comprehends those cases complicated, with convulsions—
an accident even more fatal than the former.

Every appearance of convulsions in labour is to be considered as alarming. Their attack is generally sudden; and the symptoms preceding them are violent pain of the head (chiefly the forehead), staring or wild motion of the eyes, which appear red and turgid, and general flushing of the face.

XXVII. The causes of this affection in labour may be reduced to three heads.

1. Morbid irritability of the *os tincæ*. Hence it is frequent in a first labour, and in this case a proof of it: the vagina too feels so painful and irritable, as hardly to bear examination.

2. Over distension of the uterine cavity. Thus it often occurs in case of twins, and affords, even before the delivery of the first, a proof of them.

3. Pressure on sentient parts sympathizing with the brain. It is for this reason it is not uncommonly met with in præternatural cases.

XXVIII. Our prognosis in such cases is determined by an attention to three circumstances,—their frequency, duration, and effect.

With respect to the first, many have never more than a single paroxysm without any repetition; others have them frequently in time of labour, as twelve in the course of eighteen or twenty in the twenty-four hours, and that even without any danger; so that less stress is to be laid on this circumstance, and even the more so if the patient has been formerly subject to the disease, or

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to hysteria in a violent degree. It is surprising they often observe a periodical recurrence, or regular distance between the paroxysms, so that you can count on the repetition of their attack within a few minutes.

In regard to the second circumstance, or their duration, we observe that in some they last a much shorter time than in others. The symptoms also are in some less exquisitely marked, and approach more to the nature of hysteria, while in others the paroxysm is often so violent as to prove fatal at once.

The third circumstance, or their effect on the system after the paroxysm is finished, has been most generally attended to in forming a prognosis. Thus we find, that recollection in many returns as soon as the paroxysm is ended, or at least in a few minutes afterwards. In others the senses seem altogether suspended, when the patient either continues in a state of stupefaction, or delirium succeeds. In this last situation they generally, though not always, prove fatal.

XXIX. A prognosis may also be drawn with respect to their influence on the labour itself. Thus, where slight, the labour-pains are generally assisted by them, or rendered more effectual. Where very violent, again, the child is either suddenly thrown off in a paroxysm, or the uterine efforts are entirely suspended.

XXX. For the treatment of convulsions in labour, two methods prevail, which in different situations are both equally proper.

The first is merely palliative, and trusts entirely to

nature, after obviating symptoms for the accomplishment of delivery.

The other consists in assisting the palliative treatment, by the application of mechanical means, as soon as in our power to facilitate the progress of labour.

XXXI. In executing the former, three indications come to be formed.

1. The first is to lessen primary irritation in the original affected part, which, being the uterus, we attempt it by a full dose of opium in glyster, at once taking off its irritability; and its effect in lessening the action of the uterus, in these cases, where turning is required, sufficiently points out its propriety.

2. The second is to remove distension from the system in general, and particularly from the seat of the disease, which is best performed by copious venesection; and,

3. The third is to excite a more powerful and sudden irritation in the same situation. This is best and expeditiously executed by the application of cold water to the face, according to the practice of Dr. DENMAN. The same thing has been proposed by blisters, the use of sternutatories; but these, on many accounts, are unsafe, and the application of cold bathing will be found more successful.

XXXII. This mode of treatment detailed is pointed out in those situations where the convulsions appear along with labour as a consequence, and nature may be generally trusted to finish the process. But where convulsions precede the appearance of labour, our prognosis is generally less favourable; and along with the former

treatment, as soon as the forceps can be applied, we have recourse to their assistance to finish the delivery.

XXXIII. Formerly it was the custom in such cases, before the use of the forceps was known, to attempt expediting the delivery by turning, as appears by consulting the authors before the time of Dr. SMELLIE; but the consequence of this practice was, that, from the violent irritation produced, though they accomplished delivery, yet the convulsions continuing, generally proved fatal.

3. *Prolapsed Funis.*

XXXIV. The third division of anomalous labours, consists of those cases, where the funis is prolapsed before the head. It depends on the early rupture of the membranes, from the waters being in too great quantity, and pressing down with too much force, before the head is so engaged in the passage as to prevent the descent of any other part. The consequence of this descent, from the compression of the cord, must be the death of the child, by intercepting the circulation between it and the placenta, which, till it is once expelled from the uterus, remains still necessary to continue its existence.

XXXV. In managing this kind of labour, two methods have been recommended; either,

1. The replacement of the cord behind the presenting part; or,
2. The total alteration of the presenting position, to remove the danger of pressure.

XXXVI. With respect to the first, it can only be performed when the prolapsed part is early perceived, when the head is not rivetted within the passage, and when the cord retains still its natural warmth and pulsation. In this state the head is to be prevented from advancing farther in the time of a pain; and as soon as it departs, and the uterine pressure is taken off, an attempt is to be made to carry the cord beyond the head, retaining the hand in the passage, to support it when once replaced, till the action of the uterus, pressing forward the presenting part, engage it sufficiently in the passage, so as to hinder the future descent of any other part.

XXXVII. With respect to the second, though it is recommended by many authors, it can only be employed with success at the time the water flows off, and the head is not engaged in the passage; for if the latter is allowed to descend before the hand can be got beyond it, or so far into the uterus as to reach the feet, a sufficient degree of pressure on it will have taken place to intercept the circulation, and then the circumstance which the turning was intended to prevent has already happened,—so that in this way it comes to be of no service to the child, and will essentially hurt the mother. These difficulties of turning occurred to many authors,—a new practice was preferred, where the replacement of the part cannot take place; viz. to expedite the delivery according to the presentation, by means of the forceps. But whoever is acquainted with the use of the forceps must allow, that, in the greater number of cases, before the extraction can take place, the circulation from the compression of the cord for a considerable time must have ceased.—Wherever therefore the replacement of the cord cannot be effected, the death of the child may be

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always expected; and the wrapping the prolapsed part, according to the idea of some, in a warm cloth, will not have the smallest influence upon the circulation.

4. *Plurality of Children:*

XXXVIII. The last division of anomalous labour includes a plurality of children; and till the expulsion of the first, we have no certain signs by which we can determine the presence of more than one, whatever authors may pretend by their enumeration of them.

XXXIX. The signs commonly mentioned, as distinguishing a plurality of children, are—

1. The vast distension of the uterus: though an unusual quantity of water may produce this, where there is but one.

2. A sort of cleft or hollow in the middle of the abdomen; but this does not always happen; for their membranes lie generally so close, that they form but one round tumour; yet there is frequently a sensible difference of the abdomen from what takes place in any former pregnancy.

3. The motions of the child are more troublesome and frequent than in case of a single child; but we find the motions of children so various in different pregnancies, that no stress can be laid upon this.

4. The labour is generally premature, or wants some weeks of the proper term which the woman used to observe in former pregnancies. But nothing is so various as the calculation of women, with respect to the time of gestation; and I have known them mistaken in several months. If, however, a woman who has borne children

takes her reckoning from the attack of some particular complaint, occurring at a certain period of gestation, and finds, on the commencement of labour, that she wants some weeks of her proper time, without any evident cause to account for it, a good deal of dependence may be laid on this circumstance.

5. The last symptom of twins mentioned is the complaints of pregnancy, more severe than in any former gestation; but this may be influenced by a number of constitutional circumstances, not so apparent.

XL. These are the several symptoms that give some suspicion of twins before delivery; but after the expulsion of the first child, more certain marks then occur, — which are,

1. The bulk of the abdomen, not considerably decreased, and having a degree of hardness to the touch.
2. Great difficulty in attempting to extract the placenta, which does not yield; and,
3. The continuance of the pains, for the most part pretty strong.

XLI. For the delivery of twins two methods are recommended; — the one, immediately to have recourse to it on the expulsion of the first; the other, to leave it to nature, and wait the contraction of the uterus, and a return of pain, to accomplish it.

XLII. The arguments in favour of the first are, — the ease of completing it, and the uneasiness of the patient from her former sufferings, with the consequences that may arise from leaving it, as dangerous, &c. For these reasons, the favourers of nature have generally given up their waiting for a return of her exertions; and, in all cases of twins, the practice at present is, after the expul-

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tion of the first, the hand is to be introduced into the uterus, and the membranes of the second broken. If the presentation is right, and the head beginning to be forced down by the pains, it should be allowed to advance in that direction; but if no pains have occurred after the delivery of the first, or, the patient being exhausted, they do not seem likely to occur before the membranes are broken, the child is to be turned, and the lower extremities placed towards the vagina, when it is reduced to a footling case, and then we have the full command of the delivery.

XLIII. It is needless, as some authors have done, to particularise cases of twins; it is seldom that they come both in the natural position; and where either of them presents unfavourably, the same rules will here apply as formerly directed for such deliveries in the case of one. There is only this caution to be observed, if the presentation of the first is unfavourable, and you have occasion to turn, when your hand is introduced into the uterus, as the membranes of both are sometimes ruptured at the same time, be cautious that you do not mistake a member of the one child for that of the other, as they are generally placed, where this rupture of both their membranes happens at once, in a confused manner.

XLIV. In extracting the placenta of twins, both cords are to be joined together, and grasped in one hand; and if not easily separated from the uterus before employing violence, the hand is to be introduced into its cavity as usual, though a longer time is in this case to be given if allowable, and not prevented by the attacks of flooding from the slow contraction of the organ in consequence

of over distension; for the inactivity or inertia of authors is here a very common and evident cause of retention.

XLV. Besides twins, a greater number of children are, at times, met with; but these are very rare, and the same rules will apply for their delivery as in case of twins. The delivery will, indeed, be easier here, as according to their number they are in general proportionably small*.

5. *Extra-Uterine Labour.*

XLVI. Under this head of anomalous labour may, perhaps, be considered the termination of *extra-uterine* conception. When the fœtus remains in the ovarium, though it never acquires the size of one formed in the uterus, yet it has been known to equal in bulk the regular production of five or six months. After this, when the death of the mother did not happen from its bursting the ovaria, it has gradually decayed, and in a number of years, perhaps fifteen or twenty, on the expiration of the patient, its former existence has been discovered by dissection, consisting then only of a few bones,

* Many years ago, when assistant to Dr. HAMILTON, professor of midwifery in the university of Edinburgh, the author had the good fortune to meet with a case of four children at a birth.—The subject of it was a woman past forty years of age,—she never had had any children before, and was at this time, when he first saw her, six months gone; but had the appearance, from her size, of one at full time.—After delivery, three of them survived twelve hours, and the other was born dead. They were all very sizeable for their time.—This case is related by Professor HAMILTON, in his *Outlines of Midwifery*. The patient was visited by Dr. STEWART of Edinburgh, and several other medical gentlemen at the time.

XLVII. This species of conception is generally during life mistaken for schirrus, or dropsy of the ovarium. It is in this situation previously marked by the common symptoms that attend pregnancy. The uterus also enlarges to a certain degree; and at a certain period, or the term of reckoning, something like labour-pains are felt to commence. They continue for a time, and then entirely cease. Afterwards morbid symptoms only occur at times in the seat of conception, or in the ovaria.

XLVIII. The same consequences have followed conceptions remaining in the tube, as in the ovaria; and they are likewise marked by the same train of symptoms: nor has the abdomen itself been wanting as a seat for the rudiments of the foetus, in its passage from the ovaria. In the abdomen the production has been known to equal in size a foetus produced in the uterus itself. The woman feels commonly in this case the motion of the child at the usual period, though the cervix uteri and os tincæ, remain pretty much the same, on examination, as in the unimpregnated state,—the fundus being the division chiefly affected in extra-uterine conceptions. At full time, something like the effort of labour takes place here, by an uncommon stirring on the part of the child; after which there remains only a sort of constant weight and heaviness in that place; and often, in a series of years, by making a passage for themselves, its members come to be expelled through some part of the abdomen, or even at the rectum; and the tendency to this expulsion is marked by the occurrence of pain and inflammation at these parts, with the presence of hectic fever. When the foetus is known to be in this situation,

delivery may be accomplished by means of the Cæsarian operation, of which a remarkable instance is recorded in the second volume of the Medical Commentaries; where twins were successfully extracted, and the patient completely recovered, though previously reduced to the last stage of emaciation. Farther cases are to be found of this species of conception in the different periodical publications.

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BOOK IV.

OF CHILD-BED.

I. **B**Y delivery, a new habit of body is evidently induced, different from what prevails during the former period of pregnancy; and this habit may be defined a *peculiar state of debility*, with an *increased action* of the system, as displayed by the pulse, and various symptoms of irritability.

II. That this state of debility must be considerable, is plain, when we consider,—

1. The very great degree of relaxation the removal of the uterine contents must produce, the expansion of which completely fills the abdomen, and for several months impedes the functions of the principal organs.

2. The suddenness of this removal, before the system is prepared for such a change; and hence the tendency to syncope, which so often takes place.

3. The great discharge of blood which follows the removal of the placenta, and acts as an additional power in increasing this state.

III. This state of debility, from its rapid production, we find possess an instantaneous effect on the pulse. It, for the most part, immediately rises, and in some cases

continues above 100 beats in the minute, for several days, and that without any particular symptom of disease. It then becomes in an opposite extreme proportionally low, and is often, in the course of a fortnight after delivery, under 60.

IV. With the pulse the nervous system becomes also affected. All the senses are uncommonly vivid, and the mind is easily agitated by the slightest impressions, which have at this time a powerful influence. Hence the tendency to mania which is to be remarked in many patients in child-bed, although perfectly free from any appearances of it at all other times; and the watchfulness which several women experience for many days and nights together. Hence also the powerful effect which the least surprise or fright is apt to occasion, and which has been known in certain cases to produce death.

V. This state of the nervous system (described IV.) is also increased by the continuance of pain itself. Though the removal of the placenta frees the uterus of its contents, yet it is some time before the fibres, extended for such a length of time, regain their natural contracted state; and for this purpose their action is exerted in a slight degree, forming what are called *secondary* or *after-pains*. They generally come on in a few hours after delivery. They alternate with intervals of ease, like the former. They are commonly worse every succeeding delivery, being very slight at first, depending on the degree of weakness in the tone of the organ. Their duration seldom in any case exceeds three days, though they are often to many women more distressing than the pains of labour.

VI. Though this is the general opinion entertained on the cause of after-pains, yet some objections may be offered to it; for,

1. They do not occur in a first labour, where, though the uterus is considerably elastic, still it cannot regain its original state at once.

2. Nor do they come on for some time after delivery, when the irritability of the uterus is then greatest, and its contraction most powerful. The cause, therefore, impelling this uterine contraction, may be more ascribed to the natural circulation of the organ returning after the violent collapse that emptied its vessels completely on the birth of the child; and they continue therefore till once this regular circulation is established.

VII. These pains (V.) are attended with a discharge of fluid, which continues to flow slowly for several days, and is termed the *lochia*, or *cleansings*. For two or three days, sometimes longer, it retains the red appearance. It becomes then more serous, and acquires at last a greenish cast. This discharge is most profuse in relaxed weakly patients, and departs sooner in the more vigorous and robust. Its quantity may be rated from lb. ss. to lb. i. and upwards. The size of the placenta, or extent of uterine surface it covers, has an effect in the quantity discharged at first. Women themselves are very attentive to the flow of this discharge, and consider the quantity as having an effect on their recovery. It is certain, that in all cases of puerperal disease this discharge is more or less affected, and its state, therefore, deserves perhaps more consideration than is generally paid to it. As its amount, however, as well as the continuance of it, vary so much in different subjects, we can form no certain judgment with respect to it.

VIII. About the time it begins to lose its red appearance, or often sooner, the breasts are felt swelled and painful, from the distension of the milk; previous to which, if the quantity is considerable, or the evolution of the breast difficult, some slight symptoms of fever occur; but these, when the child is applied, and the flow brought to take place, soon depart. This application of the child should never be later than 24 hours after delivery, and should not be carried far at first; and for two or three days the previous symptoms of debility, to the feelings of the patient, rather increase.

Management of Child-Bed.

IX. Having thus ascertained the state of body which prevails in child bed, its proper treatment becomes the next object of attention: and, proceeding on the symptoms enumerated, three indications come to be formed, with this view:

1. The first and leading one is to counteract debility, which is present in such a strong degree.
2. The second is to remove pain; and,
3. The third is to prevent, as far as possible, the attack of any disease incidental to the puerperal state.

X. To perform the first, some cordial, as a temporary expedient, is generally administered; and, as a more permanent application, in adjusting the dress of the patient, a roller is brought round the belly with some degree of tightness, to imitate the former tense state of those parts.

XI. For the second, an opiate is generally employed, and continued every night till the pains subside. These pains, however, assume at times the form of perma-

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ment spasm, which may be known by applying the hand externally to the abdomen, when the knotty irregular feel of the uterus will be distinguished. The treatment, besides the opiate, requires then the further aid of fomentations, and an attention to the state of the intestines, till the spasm is relaxed.

XII. To execute the third indication, the chief means are, a regular attention to the state of the primæ viæ, and the regulating the diet of the patient. As costiveness is a natural complaint of pregnancy, to prevent its continuance in child-bed after the second day, a glyster, or mild-laxative, if necessary, should be regularly administered,—as, the magnesia, cream of tartar, &c.: and this repeated every other day till the tone of the bowels is recovered.

XIII. The proper diet in child-bed is a subject which has much divided practitioners at different periods. It is now sufficiently clear that women have hitherto been kept too spare; and, in directing it, regard should be had to three circumstances:

1. The nature of the labour.
2. The patient's habit of life; and,
3. Her intention with respect to nursing.

XIV. With respect to the first, if the labour has been protracted, or means employed to assist it, which may have induced a tendency to inflammation, it will then be most prudent, for at least the first week, to confine the patient strictly to a vegetable diet.

In regard to the second, if accustomed to live well, and of a delicate or nervous habit, from the first day

animal food, in a certain proportion, may be allowed; and that either in a solid or fluid form, as most agreeable.

XV. On the third circumstance it is to be observed, where nursing is not intended, the same restriction should take place in the use of a vegetable diet, as after a difficult labour; and this further restriction should be joined to it—a rigid abstinence from the use of liquids, as much as possible, for some time.

XVI. When these circumstances are duly attended to, the recovery of the patient proceeds without interruption; and, about the third, fourth, or fifth day, the patient is first taken up, to have her bed adjusted, and her linens changed, the evening being preferred on this occasion. She is generally next day, as a matter of precaution, confined entirely to bed. After that period, she is daily allowed to set up for an hour or two in the evening. After the first week she generally sits up to dinner, reclining above the bed afterwards; and in this way gradually lengthening her time out of bed, in the course of three weeks in summer, and four in winter, she is able to go abroad; previous to which, custom has introduced the exhibition of a dose or two of physic, as a necessary precaution.

Diseases of Child-Bed.

XVII. This then forms the management of child-bed in its most favourable circumstances: we are next to consider it as a real morbid state, when complicated with disease.

XVIII. The diseases of child-bed may be divided

into those which are the immediate consequence of delivery, and those which form merely an accidental occurrence.

XIX. The former consist of either temporary affections or partial injuries.

The latter of fevers, whose attack at this period gives a peculiarity to their symptoms.

XX. The temporary affections, which at times succeed delivery, and prove embarrassing to practitioners, are faintings and hæmorrhage.

Temporary Affections.

Faintings.

XXI. Faintings here are of two kinds, either the simple hysteric deliquium, or the actual syncope,

In the former the pulse continues to be felt, the heat of the body and respiration are little altered, and a temporary suspension of the fit is procured by volatiles.

In the latter, an alarming coldness ensues; considerable oppression and suffocation prevail; the pulse is indistinct; no intermission occurs; and an hour or two decides the fate of the patient.

XXII. In forming, therefore, a prognosis, the state of the pulse and respiration are to be our guide; for where they are little effected, no danger attends.

XXIII. The treatment here consists in promoting the vigour of circulation, by a supine posture and compression, as already directed; by the free admission of air; by the use of mild cordials internally; and by the occasional application of volatiles to the nose and head; and where there is suspicion of hæmorrhage being the cause, a proper examination should take place by carrying the finger within the os uteri.

Hæmorrhage.

XXIV. Puerperal hæmorrhage is discovered chiefly by the debility induced, as indicated by the state of the pulse, and other symptoms. It is, in every case, alarming; but where protracted beyond six or seven hours, has seldom proved fatal.

XXV. Its causes are either the circumstances of the previous delivery affecting the state of the uterus, or improper regimen accelerating the circulation—the first depend on either an atony of the organ preventing its contraction, or distension of its cavity from coagula. These coagula are particularly apt to be formed where the os tincæ retains more power of contraction than the fundus.

XXVI. From the rapid effects of hæmorrhage here, its progress must be checked by the speediest means, of either inducing general deliquium, or exciting contraction of the uterus. The first is effected by raising the patient instantly to the upright posture, till fainting ensues. The second is performed by different ways of applying cold to the uterine region, as dashing cold water suddenly

on the abdomen; applying cloths, dipt in cold oxycrate, to the back; injecting cold water, with a bag and pipe, into the uterus; and these failing, by mechanical irritation of the organ itself; introducing, for this purpose, a finger into the os uteri, and rolling it round, so as to excite its contraction.

XXVII. When the hæmorrhage is somewhat abated, opiates, in small doses, are to be administered, that no sickness may ensue, and nourishment is to be thrown in, in the mildest form.

Partial Injuries.

XXVIII. Partial injuries are a frequent consequence of delivery, and equally succeed a natural and easy labour, as those of the more complicated species.

Swelling of Genital Parts.

XXIX. The first of these to be noticed is a slight swelling of the genital parts, the usual effect of a tedious labour, or a first child; it is generally attended with a slight suppression of urine, which continues for some days.

XXX. The treatment of this complaint depends on the use of fomentations and emollients, and the occasional introduction of the catheter, should the exhibition of an injection fail; or in place of the catheter, a finger being passed into the vagina, the uterus may be raised up, and thus, the pressure being taken off the neck

of the bladder, the urine will probably flow ; but in no case, if it fail, should the suppression be allowed to exceed eighteen hours, without the use of the catheter.

Laceration of Bladder of Urine.

XXXI. A more formidable degree of this complaint is found at times to succeed instrumental labour; and inflammation, with laceration of some of the soft parts, takes place: much depends on the particular seat of the injury for the issue of the complaint; if either the inflammation or laceration affect the anterior part of the vagina, or neck of the bladder, it forms, in the sequel, one of the most melancholy complaints that can attend humanity, as a constant dribbling of urine takes place for life.

XXXII. This injury seldom discovers itself for eight or ten days after delivery; but it may be suspected previous to this actual discharge of urine, whenever a suppression continues above twenty-four hours after delivery, attended with a sense of a particular soreness and pain in one spot.

XXXIII. The disease is, in every case, to be considered as incurable; for the bladder being prevented from distending, it naturally thickens, and forms afterward a stronger resistance than natural to distension, by the acrimony of the urine; the parts also, as it continues, become callous, and thus the prospect of recovery is entirely lost. To palliate other symptoms, and lessen the strong urinous smell which the patient acquires, fre-

quent bathing of the parts is necessary; while, for the cure itself, the indications pointed out are,

1st, To form a pressure against the lacerated part, preventing the exit of the fluid.

2dly, To prevent any irritation on the bladder, in consequence of distension, by soliciting a regular discharge; and,

3dly, To assist, by internal remedies, the powers of the system; to repair this laceration of the part. The first of them has been attempted by a variety of different applications, particularly the sponge pessary, soaked in a Saturnine solution, and fitted to the part. When failing, the pressure of the gravid uterus itself, in a future pregnancy, has been known to succeed; the second indication is answered by the occasional use of a bougie; and the third consists in a proper exhibition of the bark, and other tonics, with the application of the cold bath, &c.

Incontinence of Urine.

XXXIV. An incontinence of urine is also known to succeed delivery, from simple atony of sphincter. It is to be distinguished from the above complaint, chiefly by examination, and the passing a catheter, which will be found bare at the ruptured part.

In the treatment, little is to be done but observing cleanliness, by a thick compress applied on the pudendum, to soak up any moisture, and frequently changing it, till the tone of the part is restored.

Laceration of Perinæum.

XXXV. The laceration of the perinæum is, at times, a consequence of labour, particularly when rapid; and in a first case, when the pains are uncommonly strong, or the presentation in a more bulky form than usual, as the face or breech. When the laceration is sideways, there is little danger, and, by a close contact of the thighs, a re-union, in a short time, is effected; but when laceration is backwards, and extends to the rectum, a more serious evil arises in the discharge of the fæces, through the laceration. The treatment, however, is the same; and cleanliness is particularly to be attended to.

Rupture of the Uterus.

XXXVI. From the same injury that affects these external parts, the uterus itself is not exempted, at times, in consequence of delivery. A rupture of the uterus has been frequently induced by the forcible efforts of the operator in turning cases.

Such accidents cannot fail to prove generally fatal, though some instances of unexpected recovery have occurred. So soon as this injury is discovered, delivery should be expedited as soon as possible, and every means of obviating pain and inflammation attempted.

Inversion of the Uterus.

XXXVII. Another accident, no less fatal than a rup-

ture of the organ, is its inversion. It is always the effect of violence in pulling the placenta, particularly where the cord is inserted at its middle; for if violence is then used, and the adhesion of the placenta to the uterus strong, so as not to yield, and this exertion is made during the state of atony, which prevails in the uterus immediately after the birth of the child, it will first come to be dimpled; and the woman, employing her efforts from the irritation of the operator in pulling, this will proceed till the fundus is completely drawn through the external orifice.

XXXVIII. When this is effected, no return of the protruded part can be made, which is closely grasped by the contraction of the neck round it. The patient is generally seized with faintings, and death commonly ensues in a very short time. To prevent this accident, no attempt should at any time be made to remove the placenta till the contraction of the organ feel to the hand of the operator in the form of a round hard ball, immediately above the pubes.

Cows are very subject to this accident, of the inversion of the uterus. If soon replaced, they recover; and, in order to retain it, a ligature is placed on the pudendum.

Inflammation of the Uterus.

XXXIX. Inflammation of the organ is an affection that at times attends the child-bed state. It consists in a fixed throbbing pain in that part of it which has been injured, attended with a considerable degree of fever,

and it continues often for several months, before it appears, by swelling and hardness, to point to some particular spot.

XL. This affection commonly commences about the fourth or fifth day after delivery, often considerably later; it is seldom fatal, though apt to remain long.

XLI. Its treatment consists in the general means of obviating inflammation by venesection, as indicated by the pulse, by warm fomentations of the abdomen, and, should a tendency to a suppuration be discovered, by the application of poultices to that particular part, while its termination is farther hastened by the internal use of bark and opium.

Prolapsus of the Uterus.

XLII. The last effect of delivery to be noticed is the prolapsus uteri, or descent of the organ. It is most liable to occur in women in low life, who are obliged, in consequence of their situation, to rise early, after delivery, while the parts are yet in a very relaxed state; it exists in various degrees, from which it has received different appellations, and has at times been known entirely protruded beyond the external parts.

XLIII. The simple prolapsus most usual occurs. It is distinguished by the appearance of the os tinæ at its inferior part; and, previous to this, it is preceded by a slight degree of uterine pain or bearing down, which gradually increases, and produces more or less difficulty, and even suppression of urine.

XLIV. The cure of this complaint is attended with some difficulty, and three circumstances tend to counteract it.

The first is the weight and pressure of the organ itself, which possesses a tendency to gravitate downwards.

The second is the relaxed state of the vagina, which is unable to give it any support; and the third is the slight resistance of the sphincter at the os externum.

XLV. In young subjects, the reduction of prolapsus is easily effected, and it yields to confinement, to a horizontal posture: the use of styptic washes frequently applied, and general tonics, as the bark, steel, and cold bathing. But when the disease has continued long, the descent of the uterus complete, and the patient in advanced life, this simple treatment is ineffectual, and recourse must be had after its reduction to mechanical means for its support. This consists in the use of different kinds of pessaries, as afterwards taken notice of.

Fevers.

XLVI. We have now examined the first class of child-bed diseases, which are the immediate consequence of delivery. The second, or the various forms of fever, that occasionally attack this state, merit next our attention.

Weed.

XLVII. The most frequent of this class is the ephemera, or weed, which may be defined a fever, sudden in its attack, marked by a violence of rigour, and in every respect resembling the fit of an intermittent.

XLVIII. Like the intermittent, the fit is terminated by a profuse sweat, which, if properly managed, proves the crisis of the disorder; but if exceeding, in continuance, twenty-four hours, it frequently passes into continued fever.

XLIX. This affection is liable to be induced by the slightest irregularities in regimen, exposure to cold, evacuations, passions of mind, &c. When removed, it is very liable to suffer repeated returns during the puerperal state.

L. The treatment consists simply in promoting the accession of the sweating stage, on which its termination depends. This is to be done by some additional increase of heat during the cold fit, which is to be continued until the hot one commences: it may be then removed; and, on the appearance of the sweat, this discharge is to be kept up for four or five hours, when the complaint will be removed. After its removal, the use of opiates will be proper to counteract that increased irritability of the system which is its natural consequence.

Lactéal, or Milk Fever.

LI. Next to the weed falls to be noticed the lactéal, or milk fever. It generally appears from the third to the sixth day after delivery, the most critical period of child-bed; the breasts swell, and become distended, and the effect of this is a general irritation of the system, displayed in a restlessness, startings in sleep, pain of the head, and shooting of the breasts. The duration of

these symptoms is from twelve or twenty-four to forty-eight hours.

LII. The removal of these symptoms depends on the proper unloading of the breasts, and that either by suction, or else preventing the determination to them.

LIII. Suction is of two kinds,—the wet and the dry.

The first consists in the proper and timely application of the child, which should be done early, or at least so soon as a shooting or distension is felt, and endeavouring, till a proper quantity is removed, to relax the breast, by lubricating applications, as axunge, or cream rubbed upon it.

LIV. But when suckling is not intended on the part of the woman, the determination to the breast should be prevented, by early enjoining an abstemious regimen, especially with regard to her drink, and keeping the body open by the use of mild laxatives; by this means the milk will soon be carried off, either by the intestines or skin. At times, however, from the violence of the local symptoms in the breast, it is found necessary to unload it, in order to procure a temporary relief; and this is done either by wet suction, by means of a child or a puppy, or else a grown person, who has been in the habit of it. But in general, in this case, dry suction is preferred, which consists in the use of glasses and instruments of different kinds; but from the pressure they produce on the breast, they are not so safe as the former method.

LV. Such is the common treatment of the milk

fever, when the local affection of the breast is soon relieved; but when the distension is so great as to excite inflammation, the latter frequently passes on to suppuration, the termination of which is various, and exhausts the patient in a high degree. For a detail of this *vide* Volume Second, page 130.

LVI. The same morbid state that thus affects the breasts is found also to affect the nipple, and for an account of it the same reference may be made to Volume Second, page 262.

Miliary Fever.

LVII. After the lacteal, comes to be mentioned the miliary fever, which may be defined a fever attended with particular anxiety or dejection, and pain of breast, with a sourish smell, and remarkable prickling of the skin, terminating at last in an eruption of red or white spots.

LVIII. This disease, though occasionally symptomatic, and the effect of a warm regimen, is by no means always so. It clearly appeared epidemic in the tenth century, at Leipzig; and we may therefore infer, that a peculiar contagion, generated under certain circumstances in child-bed, produces it.

LIX. Authors have, also, divided it into two species, the mild and the malignant; and to the last only does the specific nature of the disease belong.

In the first kind, the pulse continues generally strong,

or partakes something of an inflammatory nature. In the latter, the pulse is quick and weak, resembling the state of typhus, and the eruption is preceded and attended by a putrid diarrhoea.

LX. The prognosis in this fever is regulated by the appearance and number of the pustles. In the mild species they are of a red colour, but in the malignant white. By the appearance of the former, a relief of the symptoms takes place; but in the latter, an increase of the disease follows the eruption, accompanied with a loss of speech and stupor, which oftens proves fatal in the space of twelve or twenty-four hours.

LXI. In the treatment of this fever, a cool regimen is particularly indicated; and in the mild species little else is necessary to produce recovery: but in the malignant, the same plan must be pursued as directed for the treatment of typhus; for which *vide* Volume First, page 301.

Puerperal Fever.

LXII. The last disease that claims our attention in child-bed is the puerperal fever, which may be defined a fever whose accession is very early after delivery, generally the second or third day, attended with a quick irregular pulse, remarkable prostration of strength, great affection of forehead, and general soreness and tension of the abdomen.

LXIII. The peculiar symptoms of the disease are—

1. The abdominal tension, pain, and soreness, which

rise to the most exquisite height, without, however, any hardness being felt, and frequently there is even no fullness.

2. The foetid discharge of the lochia (or cleansings).
3. Little or no delirium, but a constant watchfulness and dread of death; and,
4. A number of deceitful remissions, the first of which takes place in twenty-four hours after the attack, and these remissions always usher in an aggravation of symptoms.

LXIV. The cause of this disease would seem to be a peculiar contagion, affecting the puerperal state alone; for it has appeared at times epidemic, when no cases of typhus has occurred at the same period. This contagion was not taken notice of till about 50 years ago; but since that time it has appeared epidemic in a number of places: particularly at Paris in 1746 and 1762; in London in 1761 and 1772; in Edinburgh in 1773; and in Dublin in 1774 and 1787.

LXV. Though in general fatal, some instances of recovery take place, and that by a crisis on the eleventh day. The discharges attending the crisis are,—a sweat, diarrhoea, and more rarely external abscesses of the abdomen.

LXVI. Our opinion here should always prognosticate, if not a fatal, at least a doubtful event; and the more so, that the disease is liable to such delusive remissions. Even where the gangrenous state of abdomen has taken place, an entire cessation of pain is apt to mislead, though the feeble irregular pulse, and pale dejected countenance, point out, instead of relief, the rapid approach of the fatal termination.

LXVII. The chief morbid appearances of this fever, distinct from those of common putrid fever, are displayed in the abdomen. A diffused inflammation pervades the peritonæum, and the omentum is found entirely dissolved, sometimes gangrenous; collections of a serous and gelatinous fluid are also found within the abdomen, often to the extent of six or seven pounds, in which the uterus floats. The intestines are all highly inflamed, and the small ones distended with wind. The uterus is of its proper size, and, when cut into, is without disease.

LXVIII. The abdominal affection then forms the peculiar-characteristic of this fever, and the fatality of this affection we are to look for in the particular state of the parts affected by child-birth.

LXIX. These parts are the uterus and omentum; and from the effect of delivery, which consists in the operation of a mechanical stimulus upon them, their state must naturally be a tendency to inflammation. In the former, however, or the uterus, this is somewhat diminished by the hæmorrhage unavoidably succeeding the expulsion of the child, and its continuance for some time after; but in the latter, or the omentum, from the want of activity in its vessels, and the accumulation of their contents by the obstruction of its circulation during the pressure from gravidity, this state continues the same; and when affected by the general irritation attending the operation of the febrile cause, an actual inflammation occurs, which gives a new accession of violence, and adds the characteristic symptoms to the general disease.

LXX. This inflammation diffuses itself quickly over the affected membrane, and various sympathetic symptoms arise in the contiguous organs, and produce such a violent irritation, as is incompatible with the continuance of life, even without any farther local derangement, or the progress of the inflammation, proceeding an effusion of pus, from some part of the inflamed membrane, takes place into the abdominal cavity, when, in the same manner, a fatal termination ensues.

LXXI. From this cause, then, of a contagion, perhaps somewhat similar to typhus, acting upon the system, united with a peculiar local affection of a part, the theory of the disease may be deduced, and its general fatality accounted for. Both these circumstances are confirmed by the dissections of it detailed (LXVII.), and by its well-known contagious nature.

LXXII. The treatment of puerperal fever has been more varied than that of the two other species of putrid fever just described. From the appearances, on dissection, denoting inflammation, an attempt has been made here to cure it by large and repeated bleedings on the first attack, in the same manner as in the preceding disease, and these have been said to be successful at times. Ipecacuanha has been also used as a specific here. It is given in a dose of 15 grains, exhibited at twice, with an interval of an hour and a half betwixt each. This medicine is attended both with vomiting and diarrhœa. It is repeated in the same manner the following day, if the symptoms do not remit, and even continued to the third or fourth. After procuring a favourable remission in this way, wine is then to be thrown in, and sym-

ptoms of irritation obviated by the use of opium. The treatment being, in other respects, conducted on the same plan with that of putrid fever; though a prejudice prevails here, with some, against the use of bark.

LXXIII. From the inveteracy of the infection of this disease, which has been found frequently to baffle every mode of rooting it out, for some time, by fumigation, ventilation, and even white washing of the infected place, every means of prevention should be employed, and particularly the immediate removal of all puerperal women from its vicinity.

BOOK V.

PROGNOSTICS OF MIDWIFERY.

I. **W**E have thus considered the three classes of diseases peculiar to the pregnant, the parturient, and puerperal states, which form the subject of midwifery; but in the exercise of his profession an accoucheur is frequently called upon to decide certain questions in a summary way; viz. the existence of virginity, conception, the state of labour, and child-birth.

II. These points are chiefly ascertained either by an inspection of parts, or else by touching; and in detailing this operation, we shall connect, under one view, what has been delivered at large in the preceding work.

III. Touching is performed by the introduction of the fore finger, of either hand, which is generally preferred, into the vagina, the patient being previously placed in bed, on her left side, with her knees drawn up towards her breech, to facilitate its entrance. When introduced, it is to be directed first backwards and then upwards, towards the centre of the pelvis; by which the situation of the uterine orifice will come to be detected. Previous to the operation, the finger should be anointed with some unctuous substance, less to prevent

pain than to guard against the danger of infection when any accidental lesion may have taken place.

IV. The purposes of examination we have mentioned to be various. To ascertain pregnancy in its early period is a matter of considerable difficulty, and on this account practitioners, when required, have generally declined giving their opinion for some time, till the augmentation of the uterus has rendered it in some measure undoubted. When, therefore, in the early months, we are compelled, from the anxiety of the patient, to give an opinion, every circumstance that can favour the success of the operation must be attended to.

V. The circumstances that require attention for the success of touching in the early months are,—

1. The posture of the patient, which should be upright, instead of lying on her side, as the uterine orifice is generally, during gestation, beyond the reach of the finger.

2. A collapsed state of the intestines, by which the uterine tumour, however small, will come to be more distinctly felt; hence the morning has been preferred for this operation; and,

3. The additional application of the hand externally to the uterine region, which will detect the state of the body of the uterus, and assist, by its pressure, the orifice descending lower into the pelvis.

Hence, in any tumour of the abdomen, where the os uteri can be easily touched, if, on applying the hand externally, and moving, at the same time, the neck of the uterus with the finger within the vagina, the tumour does not seem affected with the motion of the neck,

there is in this case, no pregnancy, but a morbid enlargement, not affecting the uterus.

VI. From the *os tincæ* then not being affected by early pregnancy, we judge chiefly at this period by the feel of the abdomen. In its natural state the uterus is hardly felt through it; so, wherever it is distinct, and the *os tincæ* at the same time rather beyond reach, pregnancy may be suspected.

VII. There are two circumstances from which women themselves, in the early months, judge of their pregnancy; the first is, the absence of the menses; and the other (a more certain one in women who have borne children) is some peculiar circumstance, often an abdominal complaint, felt at a certain period, and which displays great regularity in its recurrence.

VIII. From the feel then of the uterine orifice alone, little information is to be drawn; for though a great regularity prevails in the enlargement of the higher parts, yet that of the neck is less to be depended upon in the exact progress of its distension: hence, though it has been mentioned by all authors, that, during pregnancy, the *os uteri* is more contracted than usual, the neck shorter and thicker, and the orifice turned more towards the rectum; yet nothing varies so much as the natural shape and size of these parts; for in some the orifice is very close, independent of pregnancy, while in others it retains always a patulous state, and the length of the neck is always subject to the same variety.

IX. From these considerations, an opinion on the

existence of pregnancy, from examination, should generally be shifted by an accoucheur as long as possible; and, when under a necessity of giving it his judgment, should be directed by a conjunction of circumstances; as,—

1. The general habit of the patient, or the presence of those characteristic circumstances which mark most strongly the female constitution.
2. The former state of uterine health.
3. The present morbid symptoms; and,
4. The examination itself.

X. Touching is employed in the latter end of pregnancy, for the purpose of ascertaining,

1. Whether labour is commenced.
2. The state of its presentation; and,
3. The nature of the labour itself.

XI. The first of these is judged of from the os tincæ falling low into the pelvis, from the pains having a sensible effect towards its dilatation, and from the orifice having little or no prominence remaining; hence, wherever the os uteri is prominent, and at the same time close shut, you may decide on the woman not being in labour, whatever degree of pain she may suffer.

XII. The state of presentation is learnt from the manner in which the membranes form, and from the feel also of the presenting part itself through them; for, as the uterine orifice dilates, the weight of the waters forces the membranes through it. When they appear in the regular form of an elastic round bag, it is a favourable sign. When they want a good deal of their elasticity, even in time of a pain, then the passage is

confined, and the presenting part does not allow their coming forward. When they appear long, soft, and, as it were, like a gut, it is a mark of an unfavourable presentation, the uniform pressure of the head being wanting to hinder the membranes from falling down more on one side than on the other. An opinion from the gathering of the waters can only be formed during the presence of pain; while the presentation again is chiefly to be judged of during its absence, or as the pressure of the water recedes, when nothing but the thin coat of the membranes is interposed. The head is generally discovered by its round form and hardness. If very minute in your examination, the fontanelle may even at times be felt.

Wherever there is a want of that resistance which the head always gives us, the presentation is then unfavourable, the rupture of the membranes should be watched with the greatest attention; and advantage immediately taken of that time to put matters in a proper train for delivery. Where, however, the breech presents before the rupture of the membranes, it is often a difficult matter to decide whether this part is not actually the head; but it is of little consequence, as, on the breaking of the membranes, the fact will be easily ascertained, when it is time enough to enter on the mode of delivering.

XIII. The last species of information derived from touching in labour, is the nature of the labour itself; and this is determined,

1. By the space of the bony cavity.
 2. By the appearance of the os tincæ; and,
 3. By the apparent resistance of the other soft parts.
- Whenever the finger, introduced into the vagina, touches

with ease the sacrum or coccyx, the pelvis is faulty in that direction. Where two fingers are not admitted easily under the pubes, a distortion of that part may be suspected. Where the hand, introduced by the lateral part of the pelvis, is cramped in its passage, the general space of the cavity is defective. The same may be learnt by the early over-lapping of the bones of the head on its presenting in labour. Where the finger, brought round the head, having already entered the pelvis, feels a considerable space on one side more than on the other, a projection of the sacrum takes place: and where the head on the commencement of labour is too easily felt before entering the pelvis, a general shallowness of capacity is more or less indicated.

XIV. The appearance of the os tincae again, as well as of the pelvis, is a circumstance on which most practitioners of experience greatly rely. If situated towards the pubes, it is remarked, as the uterus is then more towards the external orifice, and has descended lower, the labour, where no morbid resistance occurs, is more expeditious than when it originally presents towards the sacrum. If the uterine orifice is soft and dilatable, with its edges thin and flat, and the patient's pains seem to have much effect, a quick labour may be expected; while, on the contrary, if the orifice is with difficulty reached, if it feels dry and rigid, and thickens in its progress, forming into a tumid ring round the presenting part, the reverse may be expected. If the pains also continue for some time regular and strong, and the orifice is still hardly to be reached, an unfavourable presentation may be looked for; the more extensive pressure from the incumbent parts drawing it from side to side, and the part itself not falling easily into

the cavity of the pelvis, like the head; the ossification also of the head itself, when the membranes are ruptured, and it forms the presenting part; enables us to judge somewhat of the nature of the labour.

XV. The last circumstance enumerated, as directing our opinion in labour, is the state of the soft parts themselves; if the parts are dry and rigid, possessing little secretion of natural mucus, a tedious labour is then to be expected. If the parts, independent of the secretion, possess a good deal of elasticity, as commonly happens in a first labour, the same inference may be drawn.

XVI. But, independent of pregnancy at all, it is by the touch alone a diseased state of the uterus can be determined, and proper means of relief applied in those different organic affections to which it is subjected. Thus, where there prevails in a woman of advanced life a long continued flooding, or one frequently recurring with a degree of nifus, or occasional down-bearing pain, though a polypus of the uterus may indeed be suspected, it is only by the touch it can really be ascertained. In the same way, when a woman at this period of life feels a weight in the uterine region, with occasional lancinating pains, a schirrus may be suspected; and when, on touching, the os uteri seems painful on pressure, it is then beyond a doubt.

XVII. We have thus detailed the chief circumstances which regulate our opinion on touching during pregnancy and labour. The disease for which pregnancy is most liable to be mistaken is dropsy, especially when encysted. Dropsy of the uterus itself is a very rare complaint, and can only happen when some obstruction,

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from disease, occurs at the *os tinæ*: but even here it requires a particular state of the organ in order to be induced; hence it is generally symptomatic of *schirrus*; and as this last affection is seldom confirmed till after the age of child-bearing, it can never almost, although alleged by authors, be mistaken for pregnancy. Dropsy of the ovarium, however, is more common; and being generally long before it arrives at any considerable size, little pain is felt from it until this period.

It first begins with a dull pain on one side: to this is soon added a sense of weight. These symptoms continue to increase, when the thigh and leg of the same side come to be affected. As menstruation becomes always in this case irregular, and as the subjects of the disease are frequently young, pregnancy becomes a natural suspicion, and it is impossible for some time to know the difference; for the increased thirst, and paucity of urine, is less common here than in the other species of dropsy. On this account our opinion must be suspended, till, from the continuance of the symptoms beyond the proper period, it comes to be distinguished as arising from a morbid cause.

XVIII. The last species of information which the profession of the accoucheur is often called upon to decide, is whether at any former period pregnancy may have taken place, or even, independent of pregnancy, whether the female is still in what may be termed the virgin state.—Nothing is more fallacious than the pretended criterions of authors to ascertain these points.—Where, however, an accoucheur is professionally called upon, he is under the necessity of passing an opinion; and practitioners of experience, conscious of its difficulty, have

inclined therefore always to the favourable side, that they may not, on any equivocal proof, include the innocent with the guilty, or by their decision condemn, where room only is afforded for suspicion.

XIX. The signs of previous delivery enumerated by authors are chiefly drawn from the state of the parts affected; they consist of—

1. A slight swelling, or relaxation of the genital parts.
2. Considerable dilatation of the vagina.
3. The uterine orifice, soft and patulous, with its edges divided into flaps.
4. The appearance of cicatrification over the external surface of the abdomen, and mammæ; and,
5. The length of perinæum.

Many others are mentioned, but these are chiefly to be depended upon; but at the same time the examination should be made a few days after delivery; for these appearances become soon so indistinct, that they cannot be trusted to,—and it is only by their occurring all together, that our judgment can, with accuracy, be directed.

XX. Where, in other cases, a woman has died under this suspicion, and a greater length of time has elapsed than what the former symptoms are confined to, if dissection is allowed, an infallible criterion is afforded, by examining the state of the ovum, and ascertaining the existence of that cicatrix which is found to mark the situation of the corpus luteum.—This circumstance it is now known, for certain, is never discovered in any but those who have previously conceived. Hence no mistake can arise in determining an opinion here.

XXI. The symptoms of virginity which have been so largely entered into by most writers are still more fallacious than those now detailed, as marking the previous existence of pregnancy; they are chiefly drawn—

1. From the firmness of texture of the external parts.
2. From the existence of the hymen; and,
3. From the discharge of blood on the first attack.

XXII. On these symptoms it may be remarked, that with regard to the mere tension and firmness of the parts this will be much influenced by the natural state of constitution; for where the female is robust, even after violation, they will for some time retain their elasticity, which we find even occasionally the case in prostitutes. Besides, by the use of astringents, the natural tension of the parts, when lost, may be regained, and that even to such a degree, that a case is mentioned by SAVIARD, where the vagina of a girl was so contracted, as hardly to admit the size of a writing quill: this practice, however, is not so often to be met with in this country; but in some others it is frequently employed. The parts also, from uterine diseases, where the health of the female suffers, frequently lose their proper firmness and tension, without the smallest suspicion of any violation of chastity.

XXIII. The second symptom of virginity, or the existence of the hymen, is no way to be trusted, when it is so readily ruptured by accidental circumstances in infancy, that it seldom remains entire to the age of puberty. Besides in different women its extent varies, and therefore it may exist without the husband's detection, unless very attentive in his examination.

XXIII. The last symptom, or the flow of blood on the first attack, has been often spoken of; and though con-

sidered even by the Jewish legislature as a proper test of this state, it is equally fallacious with the former; for if the parts are, from morbid causes, in a relaxed state, they will not give that resistance which occasions the flow; and even if menstruation has happened immediately preceding coition, so that the vessels are depleted, no discharge will frequently ensue, though the parts retain their natural state: nay, such is the effect of disease upon the parts, that an artful woman may often impose upon the most experienced of the other sex,—and for her own purposes feign to have suffered violation, which we shall find it difficult, from inspection, to contradict. Hence, as Mr. BURTON justly observes, Virginity is more to be considered as a moral virtue, existing in the purity of the female mind; and those superstitious ceremonies, formerly in use of ascertaining it, are to be considered as the real ways of violating it; and that every situation that produces an internal bluish, is a real prostitution.

XXV. With a view to the preservation of virginity, it is curious to remark the different customs that have been introduced into different countries.—Men, both in rude and polished life, have been for the most part jealous of a prior possession in this case.—Anatomists have favoured this jealousy, by fixing certain criterions for detecting it. Hence the happiness of society has been often disturbed, and suspicions excited from a pretended knowledge on this subject, where there was properly no room for them. It is therefore of importance to inculcate the very slight dependence that is to be placed on any opinion of this kind. Whatever the debauchee may pretend, there are no unerring criterions to go by,—and at any time a woman of address may deceive the most knowing of the other sex, who trust to the infallibility of such appearances.

MATERIA MEDICA

AN
OBSTETRICAL PHARMACOPŒIA;

DIVIDED INTO
THREE PARTS,

viz.

MATERIA MEDICA, CLASSIFICATION,

AND

EXTEMPORANEOUS PRESCRIPTION.

OSTEITRICAL PHARMACOPOLIA

DIVISION TWO

THREE PARTS

NEW MEDICAL ASSOCIATION

PHARMACOPOLIA

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V

PART I. MATERIA MEDICA.

CONTAINING, THE ACTIVE REMEDIES,

In Present Practice,

SIMPLE, COMPOUND, AND CHEMICAL,

WITH THEIR DOSES.

Simple.	Parts used.	Dose.	Compound and Chemical.	Dose.
<i>Abſinthium.</i> Wormwood.	<i>Tops.</i>	℥ſ. to 3j.	<i>Sal Abſinthii</i> <i>Tinct. Abſinthii</i>	gr. v. 3j. to iſs.
<i>Acetum Vini.</i> Vinegar.			<i>Sal Aceti.</i> <i>Syrup Aceti.</i> <i>Serum Acet. ad libitum</i> (3j. Acet. ad 1℔j. Lact.)	3j.
<i>Acidum Vitrioli- cum.</i> Vitriolic Acid.			<i>Sp. Vitriol. tenuis. gt. x. to xx.</i> <i>vel Acid. Vitriol. dilut.</i> <i>Sp. Vitriol. dulcis.</i> <i>vel Sp. Ætheris Vitriol.</i> <i>Sp. Æther. Vitri. gutt. xxx.</i> <i>vel Æther Vitriolicus.</i> <i>Elix. Vitri. Acid. gutt. xxx.</i> <i>vel Acid. Vitri. Aromat.</i> <i>Elix. Vitri. dulc. gutt. xxx.</i> <i>vel Sp. Æth. Vitri. Arom.</i>	3j.
<i>Ærugo,</i> <i>vel Cuprum acido</i> <i>acetos. reſ.</i> Verdigræſe.			<i>Ung. ærugina.</i> <i>Aqua Sappharina.</i> <i>vel Aqua Ærug. ammon.</i>	

<i>Simple.</i>	<i>Parts used.</i>	<i>Dose.</i>	<i>Compound and Chemical. Dose.</i>
<i>Aloe.</i>		gr. iij. to 3℥.	Tinct. Sacra. 3ij. to 3℥. vel Vinum Aloeticum. Pil. Aloetic. vel Pil. Aloes cum Myrr.
<i>Aloes.</i>			Pil. Rufi 9j. to 3℥. Elix. Proprietatis gutt. xv. to 3i. vel Elix. Aloes cum Myrr. Elix. Proprietatis Viriolic. gutt. xv. to 3j. vel Tinct. Aloes vitriol.
<i>Althea.</i> Marshmallow.	Leaf and root.	9j. to 3℥. (3j. to 1℔.) Syrup. Althea	Decoct. Althea 1℔ij. in dies. 3j. to 1℔ij. 3j. sæpe.
<i>Alumen.</i>		gr. iv. to 9j.	Pulv. styptic. gr. x. to 9j. vel Pulv. Alum. comp. Serum Alumin. 3iv. to 1℔ij. Coag. Aluminos.
<i>Alum.</i>			Aqua styptic.
<i>Amygdalæ amaræ.</i> Kernel. Bitter Almonds.		gr. iv. to 9℥.	Ol. Amygd. Amar.
<i>Amygdalæ dulces.</i> Kernel. Sweet Almonds.		ad libit.	Ol. Amygdal. 3j. to 3ij. Emulsio cois. ad libit.
<i>Amylum.</i> Starch.			Mucilago Amyli. 3j. sæpe.
<i>Anethum.</i> Dill.	Seed.	9j. to 3j.	Ol. Anethi. gutt. iij. Aq. Anethi. 3ij. to iv.
<i>Ammoniacum.</i> G. Ammoniac.		9j. to 3j.	Lac Ammon. 3j. sæpe. Emplast. Ammon.
<i>Angustura.</i>	Bark.	9j. to 3j.	Decoct. August. 1℔ij. in dies. Tinct. August. 3j.
<i>Anisum.</i> Anise.	Seed.	gr. iv. to xv.	Ol. Anisi. gutt. iij. Aq. Anisi. 3ij. to iv.

Simple.	Parts us'd.	Dose.	Compound and Chemical.	Dose.
<i>Antimonium,</i> <i>vel Antimon.</i> <i>Preparat.</i> Antimony.		gr. v. to 3j.	Sulph. Aurat. Ant. <i>vel Sulphur Antimonii pre-</i> <i>cipitatum.</i> Pulv. Antimon. gr. iij. to vi. Calx nitrata Ant. <i>vel</i> Pulv. Jacob. gr. v. to xij. ter in die <i>vel Antimon. ust. cum Ni-</i> <i>tro.</i> Tartarus emeticus. gr. i. to vi. <i>vel Antimon. tartarizat.</i> Vinum ē Tartar Emetic. gutt. xv. to xxx. <i>vel Vin. Antimon. tartari-</i> <i>fati.</i> Vin. antimonial. gutt. v. to 3ss. <i>vel Vin. ē Tartar Antim.</i>	gr. iv. to xvi.
<i>Arabicum.</i> Gum. Arabio.		℥ij.	Trochisci albi. Mucilago Gum. Arabic 3iv. ad ℥j. Emulsio Arabic. ad. libit.	ad libit.
<i>Arnica.</i> Herb, flowers, and root.			Decoct. Arnicae. ℥ss. in die. (3j. flor. ℥j.) Extract Arnicae. 3ij. to iv. in dies.	
Leopard's bane. <i>Arsenicum.</i> Arsenic.		℥j. to 3j. gr. 1 to iij.	Solut. Arsenic. (gr. iv. to ℥ss.) a table spoonful.	
<i>Asa foetida.</i> Aurant. Hispanse Leaf, flower, juice of fruit, & outer rind.		gr. x. to 3ss.	Pil. Gum. 3j. <i>vel Pil. Asafoetida com.</i> Tinct. foetida. gutt. x. to 3j. <i>vel Tinct. Asafoetida.</i> Aq. Cort. Aurant. 3ij. to iv. Syrup. Cort. Aur. 3j. Conserv. Aurant. ad libit. Ol. Neroli.	
Seville Orange.		ad libit.		

<i>Simple.</i>	<i>Parts used.</i>	<i>Dose.</i>	<i>Compound and Chemical.</i>	<i>Dose.</i>
<i>Avena.</i> Oats.	Seed.		Decoct. <i>Avenæ.</i>	ad libit.
<i>Balsamum Canadense.</i> Canada Balsam.		gtt. xx. to xxx.		
<i>Balsam Copaibæ.</i> Capiivi Balsam.		gtt. xx. to xxx.		
<i>Balsam Peruvian.</i> Balsam of Peru.		gtt. x. to xl.		
<i>Balsam Toletan.</i> Balsam of Tolu.		gr. v. to ℥j.	Tinct. Toletan. gtt. v. to xx. Syrup Balsam. ℥j. to ij. vel Syrupus Toletanus.	
<i>Barilla.</i> (Impure Fossile Alkali.)			Soda purificata. ℥ss. to ℥j. Sal Rupellenfis. ℥ss. to 3x. vel Soda tartarificata. Sal Glauberi. 3v. to 3x. vel Soda vitriol ata.	
<i>Belladonna.</i>	Leaves.		Infus. Belladon. ℥i. (gr. j. to 3j.)	
Deadly Night-shade.	gr. j. to vj.		Extract. Bellad. gr. j. to iv.	
<i>Benzoinum.</i>			Flor. Benzoin. gr. iv. to vj. vel Acidum Benzoidicum.	
<i>Benjamin.</i>	gr. iv. to xv.		Tinct. Benzoin. gtt. x. to xl. vel Tinct. Benzo. comp.	
<i>Borax.</i>			Sal sedativ. Hombergii. gr. iij. to ℥j.	
<i>Tincal.</i>	gr. x. to ℥j.			
<i>Calx viva.</i> Quicklime.			Aqua Calcis. 3iv. to ℥j. Lixivium caustic. gt. xv. to x℥. vel Aq. Lixiv. caustic. Lix. caust. acer. mit.	
<i>Campbora.</i>			Sp. vinos. camph. Emulsio camphor. ad libit.	
<i>Camphire.</i>	gr. iij. to 3ss.		Bals. Opodeldoch. vel Linim saponaceum. Linim. volat. vel Oleum Ammoniatum. Aq. vitr. camp.	

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Crab.
Cantba

Spanish

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Lesser
Cardam
Holy
Carvi.
Carray
Caryop
Clove.

Caryop
Clove
Casca

Cassia
Cassia
Cassia
Cassia
Castor
Casto
Catec

Japa

<i>Simple.</i>	<i>Parts used.</i>	<i>Dose.</i>	<i>Compound and Chemical. Dose.</i>
<i>Canela alba.</i>	Bark.		
Wild Cinnamon.		gr. iv. to vj.	
Cancer.			Oculi Cancrorum. ʒj. to ʒj.
Crab.			Chelæ Cancror. ʒj. to ʒj.
Cantharis.			Tinct. Canthar. gtt. xx. to xxx.
			Emplast. Vescicator.
			vel Emplast. Cantharid.
Spanish Fly.		gr. ss. to ij.	Ung. epispas. fort.
			vel Ung. Pulv. Canthar. mit.
			vel Ung. Infus. Canthar.
Cardamom minus. Seed.			Tinct. Cardom. ʒj. to ʒj.
Lesser Cardamom.		gr. iij. to ʒ ss.	
Carduus benedict. Leaves.			
Holy Thistle.		gr. j. to ʒj.	
Carvi.	Seeds.		Ol. Carvi. gtt. iij.
			Aq. Carvi. ʒij. to iv.
Carraway.			(spirit. ʒj.)
			vel Spiritus Carvi.
Caryophylla arom. Fruit.			Ol. Cary. gtt. iij.
Clove.		gr. iij. to ʒ ss.	
Caryophylla rubra.			Syr. Caryophyl. ʒj.
Clove July flower.			
Cascarilla.	Bark.	gr. iv. to xij.	Infus. Cascaril. ʒij.
			(ʒj. to ʒij.)
Cassia fistularis. Fruit.			Elect Cassia. ʒ ss. to ʒj.
Cassia of the Cane.		ʒij. to ʒi.	
Cassia lignea.	Bark &		Aq. Cassia. ʒij. to iv.
Cassia Bark.	flowers.	ʒj. to ij.	
Castoreum.			Tinct. Castor. ʒj.
Castor.		gr. iv. to ʒj.	Tinct. Cast. Comp.
Catechu.			Tinct. Japonic. ʒj. to ʒij.
			vel Tinct. & Catechu.
			Conf. Japonic. gr. v. to ʒj.
			vel Electuar. Japon.
Japan Earth.		ʒj. to ʒ ss.	Infus. Japonic. ʒij. to iv.
			vel Infus. Catechu.

Simple.	Parts used.	Dose.	Compound and Chemicals.	Dose.
<i>Centaur minus.</i>	Tops.			
Lesser Centaury.		3 fl.		
<i>Cera alba et flava.</i>			Linim. simplex.	
White and Yellow			Ung. simplex.	
Wax.			Cerat. simplex.	
			Ung. Basilicon.	
			vel Ung. Resinosum.	
			Emplast. cereum.	
			vel Emplast. simplex.	
<i>Cerussa.</i>			Sacehar. Saturni.	gr. ½ to j.
White Lead.			vel Cerussa acetata.	
			Ung. Saturni.	
			vel Ung. Ceruss. acetat.	
			Ung. album.	
			vel Ung. Cerussæ.	
			Tinct. antiphthif.	gtt. xv. to xxx.
			vel Tinct. Ceruss. acetat.	
<i>Chamæmelum.</i>	Single.		Extra Cham.	gr. vj. to 3 fl.
Chamomile.	flower.	gr. v. to ʒj.	Decoct. cois.	ad libit.
			vel Decoct. Chamæmel.	
<i>Cicuta.</i>	Leaves,		Extr. Cicut.	gr. v. to ʒj.
Hemlock.	flower,	gr. vj.		
	and seed.	to cxxviii.		
<i>Cineres clavellati.</i>			Lixiv. purificat.	gr. iij. to v.
Pot or Pearl-sth.			Tart. regenerat.	3j.
			vel Lixiva acetata.	
			Tart. vitriolat.	3j. to v.
			vel Lixiva vitriolata.	
			Tart. solubile.	3 fl. to 3j.
			Lixiva tartarizata.	
<i>Cinnamomum.</i>	Bark.		Species aromat.	gr. v. to xv.
			vel Pulv. Aromaticus.	
			Conf. Cardiac.	ʒj. to ij.
			vel Elec. Aromaticum.	
			Ol. Cinnam.	gutt. iij.
			Tinct. aromat.	3j. to ij.
			vel Tinct. Cinn. comp.	
Cinnamon.		gr. iij. to 3 fl.	Tinct. Cinnam.	3j. to ij.
			Aq. Cinn.	3ij. to iv.
			spirit.	3j.
			vel Spiritus Cinnamoni.	

<i>Simple.</i>	<i>Parts used.</i>	<i>Dose.</i>	<i>Compound and Chemical.</i>	<i>Dose.</i>
<i>Cochlearia.</i>	Leaves.		Succ. ad scorbut.	℥ij. to ʒj.
			vel Succ. Socblear. comp.	
Scurvy Grass.		℥ss. to ij.		
<i>Colchicum.</i>	Root.		Syrup. Colchici.	℥j. to ij.
Meadow Saffron.		gr. ij. to ʒj.		ter in dies.
<i>Colocynthis.</i>	Fruit.		Pil. Coccia.	ʒj. to ij.
			vel Pil. Aloes cum Coloc.	
Bitter Apple.		gr. v. to ʒj.		
<i>Columba.</i>	Root.		Tinct. Columbæ.	℥ss. to j.
Columbo.		gr. x. to ʒj.		
<i>Contragerva.</i>	Root.		Pulv. Con. com.	ʒj. to 3j.
Counter-poison.		gr. vj. to 3ss.		
<i>Coriandrum.</i>	Seed.			
Coriander.		3ss. to 3j.		
<i>Cornu Cervi.</i>			Sal. C. C.	gr. iii. to xv.
			vel Ammonia præparata.	
			Sal. C. C. volat.	gr. vj. to ʒj.
Hartshorn.		℥ss. to 3j.	Ol. C. C.	gutt. x.
			vel Aq. Amm. ex Ossibus.	
			Sp. C. C.	gutt. xv. to 3j.
			Decoct. alb.	℥iv. sæpe.
<i>Cortex Peruvianus.</i>			Extr. C. P.	gr. v. to ʒj.
			Decoct. C. P.	℥j. to ij. ind.
			vel Decoct. Cinchonæ.	
Peruvian Bark.		ʒj. to 3j.	Tinct. C. P.	3j.
			vel Tinct. Cinchonæ.	
<i>Greta alba.</i>				
			Pulv. cretaceus.	ʒj. to 3j.
Chalk.		ʒj. to 3j.	Potio cretacea.	℥iv. sæpe.
			Trochisci Cretæ.	ad libit.
<i>Orcus.</i>	Chives.		Tinct. Croci.	gutt. x. to 3j.
Saffron.		gr. v. to ʒj.		
<i>Elaterium.</i>	Fruit.			
Wild Cucumber.		gr. j. to iij.		
<i>Cuprum vitriolatum.</i>			Aq. styptic.	
			vel Aq. Cup. vitr. comp.	
Blue Vitriol.		gr. ½ to j.		

<i>Simple.</i>	<i>Parts used.</i>	<i>Dose.</i>	<i>Compound and Chemical. Dose.</i>
<i>Digitalis.</i> Fox-glove.	Plant.	gr. j. to viii.	
<i>Ferrum.</i> Iron.			Limatura. gr. iv. to viij. Marsfaccharat. gr. iv. to viij. Vitriol. calcinat. gr. ff. to iij. <i>vel Ferrum vitr. exsiccat.</i> Colcothar. vitriol. gr. ff. to iij. <i>vel ————— usum.</i> Flories martiales. gr. vj. to ʒj. <i>vel Ferrum ammoniatum.</i> Tinct. Martis. gutt. x. to xx. Sal Chalybis, <i>vel</i> Vitriol. Martis. gr. ij. to vj. <i>vel Ferrum Vitriolatum.</i>
<i>Fuligo Ligni.</i> Woodfoot.			Tinct. Fulgin. gutt. x. to ʒj.
<i>Galbanum.</i> Galban.		gr. x. to xv.	
<i>Gallæ.</i> Galls.		gr. ij. to vj.	
<i>Gambogia.</i> Gamboge.		gr. ij. to vj.	
<i>Gentiana.</i>	Root.		Extr. Gentian. gr. v. to ʒff. Infus. amar. ʒj. to ʒiv. <i>vel Infus. Gentiani comp.</i> Gentian. ʒj. to iij. Vin. amar. ʒj. to iij. <i>vel Vin. Gentiani comp.</i> Elix. stomach. ʒff. <i>vel Tinct. amar. vel G. c.</i>
<i>Glycirrhiza.</i>	Root.		Extr. Glyc. ad libit. Decoct. Glyc. idem.
<i>Liquorice.</i>		ʒff. to ʒj.	(ʒj. to ʒij.) Trochisci, Nigr. idem. <i>vel Trochisci Glycirrb.</i>
<i>Granata Malus.</i> Pomegranate.	Flowers & rind of the fruit.	ʒj. to ʒj.	

Simple.	Parts used.	Dose.	Compound and Chemical.	Dose.
<i>Guajacum.</i>	Wood, bark, & resin.		Gum Guiac. ʒss. to ʒss. Elix. Guiac. gr. xx. to ʒss. vel Tinct. Guajaci.	
<i>Guiaç.</i>		ʒss.	Elix. Guiaç volat. ʒss. vel Tinct. g. ammoniata.	
<i>Hordeum.</i>	Seed.		Decoct. Hordei.	ad libit.
<i>Barley.</i>				
<i>Hydrargyrum.</i>			Merc. calcinat. gr. j. to iij. vel Hydrarg. calcinat.	
			Pil. Mercur. gr. x. to xv. vel Pil. Hydrargyri.	
<i>Mercury.</i>		ʒss. to ij.	Pil. Æthiopicae. gr. x. to ʒj. Æthiops mineral. ʒij. vel Hydr. sulphur. niger.	
			Pil. Plummeri. gr. x. to ʒj. vel Pil. Calomelan. comp.	
			Ung. cœruleum. vel Ex. Hydrarg.	
			Ung. Citrin. vel Ung. Hydr. nitr.	
			Ung. Calc. Hydrar. alb. Emplast. cœrul. vel Empl. Hydr.	
			Mer. corros. subl. gr. ss. to ij. vel Hydr. muriat. corros.	
			Mer. dulcis. gr. j. to v. vel Calomelas.	
			Turpeth mineral. gr. ss. to j. vel Hydr. vitriolat. flav.	
			Mer. cinereus. gr. ij. to iv. vel Hydr. præcip. citr.	
			Mer. præc. rubr. gr. j. to iij. vel Hydr. nitrat. rubr.	
			Mer. præc. alb. gr. ij. to iij. vel Calx. Hydrarg. alb.	
<i>Hyosciamus.</i>	Herb. & seeds.		Extr. Hyf.	gr. j. to ʒj.
<i>Henbane.</i>				
<i>Jalapium.</i>	Root.		Pulv. Jalap. comp. ʒj. to ʒss. Pil. e Jalap. gr. x. to xv.	
<i>Jalap.</i>		gr. x. to ʒij.	Resin Jalap. ʒss. to ʒj. Tinct. Jalap. ʒij. to vj.	

<i>Simple.</i>	<i>Parts used.</i>	<i>Dose.</i>	<i>Compound and Chemical.</i>	<i>Dose.</i>
<i>Ipecacubana.</i>	Root.		Pulv. Dover. gr. x. to ʒj. vel. Pulv. Ipecac. comp.	
<i>Ipecacuhan.</i>		ʒss. to j.	Tinct. Ipecac. vel vin. Ipecac.	ʒj. to ij.
<i>Juniperus.</i>	Berry		Ol. Juniperi.	gutt. ij.
<i>Juniper.</i>	& top.	ʒij. Bacc.	Aq. Junip. comp. vel Sp. Juniper. comp.	ʒj.
<i>Kino.</i>		gr. viij.	Tinct. Kino.	ʒss. to j.
<i>Gum Kino.</i>		to xij.		
<i>Lapis calaminaris.</i>			Cerat. Lap. cal.	
<i>Calamy.</i>				
<i>Lavendula.</i>	flower.		Ol. Lavand.	gutt. v.
<i>Lavender.</i>	& tops.	ʒj. to iij.	Sp. Lavand. gutt. xxx. to ʒj. Sp. Lav. Comp.	idem.
<i>Lichen Islandicus.</i>			Mucilag. Lichen.	ad libit.
<i>Iceland Liverwort.</i>		ʒj. to iij.		
<i>Lignum Campachense.</i>			Extr. L. C.	gr. v. to xv.
<i>Logwood.</i>		gr. x. to ʒj.	Decoct. L. C. (ʒij. to ʒij.)	ʒiv. sæpe.
<i>Lilium album.</i>	Root.		Mucilag. Rad.	ad libit.
<i>White Lilly.</i>		ʒj. to ʒj.		
<i>Limon.</i>	Juice,		Succ. Limon.	ʒj. to ij.
	outer		Syrup. Limon.	ʒj.
<i>Lemon.</i>	rind, &c.		Aq. Limon.	ʒij. to iv.
<i>Linum.</i>			Infus. Lin.	ad libit.
			(ʒss. to ʒss.)	
<i>Lintfeed.</i>			Ol. Lini.	ʒj.
<i>Lithargyrus.</i>			Acet. Lithargyr.	gr. x. to ʒj.
<i>Litharge.</i>			Aq. veg. mineral.	
<i>Manna.</i>			Serum Mannæ.	ad libit.
<i>Manna.</i>		ʒij.		
<i>Magnesia alba.</i>				
<i>Magnesia.</i>		ʒj. to ʒij.		
<i>Melampodium.</i>	Root.		Extr. Melam.	gr. v. to ʒss.
<i>Black Hellebore.</i>		gr. vi. to ʒss.	Tinct. Melamp.	ʒj. to ij.

Sim
Mentha
Pepper
Mentha
Spearmin
Mezere
Moschus
Musk.
Myrrha
Myrrh.
Nitre.
Nitre.
Nux Me
vel M
Nutmeg
Olea ex
Express
Opium.

<i>Simple.</i>	<i>Parts used.</i>	<i>Dose.</i>	<i>Compound and Chemical.</i>	<i>Dose.</i>
<i>Mentha Pipirit.</i>	<i>Leaves.</i>		<i>Ol. Mentha.</i>	<i>gutt. iij.</i>
<i>Peppermint.</i>			<i>Aq. Menth.</i>	<i>3ij. to iv.</i>
			<i>spirit.</i>	<i>3j.</i>
			<i>vel Sp. Mentha.</i>	
<i>Mentha Sativa.</i>			<i>Infus. Callid. vel Thea.</i>	
<i>Spearmint.</i>			<i>(3j. to ℥ij.)</i>	<i>ad libit.</i>
<i>Mezereon.</i>			<i>Decoct. Mez.</i>	<i>℥ij. indies</i>
	<i>gr. ff. to iij.</i>		<i>(3j. to ℥ij.)</i>	
<i>Moschus.</i>			<i>Tinct. Moschi.</i>	<i>gtt. xxx. to 3j.</i>
<i>Musk.</i>	<i>gr. iij. to xij.</i>		<i>Tinct. Myrrhæ.</i>	<i>gtt. xv. to 3j.</i>
<i>Myrrha.</i>				
<i>Myrrh.</i>	<i>gr. iij. to xij.</i>		<i>Acid. nitros.</i>	<i>tenue. gtt. aliq.</i>
<i>Nitrum.</i>				
<i>Nitre.</i>	<i>gr. vi. to 9j.</i>		<i>Trochisci Nitri.</i>	<i>ad libit.</i>
			<i>Sp. Nitri dulcis.</i>	<i>3 ff. to j.</i>
			<i>vel Sp. Ætheris nitrosi.</i>	
			<i>Cautic. Lunar.</i>	
			<i>vel Argentum nitratum.</i>	
			<i>Sal Polychrest.</i>	<i>3ij. to 3 ff.</i>
			<i>vel Lixiva vitriol. sulph.</i>	
<i>Nux Moscbata.</i>			<i>Aq. Nuc. spirit.</i>	
<i>vel Myristica.</i>				
<i>Nutmeg.</i>	<i>gt. xv. to 3j.</i>			<i>3j. to 3j.</i>
			<i>vel Sp. Myristica.</i>	
<i>Olea expressa.</i>				
<i>Expressed Oils.</i>	<i>3j.</i>		<i>Pil. pacific.</i>	<i>gr. x. to 9j.</i>
<i>Opium.</i>			<i>vel Pil. Opii.</i>	
			<i>gr. j. to cxx.</i>	<i>L. Laudanum. gr. xxx. to 3j.</i>
				<i>vel Tinct. Opii.</i>
			<i>Elect. Thebaic.</i>	<i>3ij. to 3 ff.</i>
			<i>vel Electuar. opiatum.</i>	
			<i>Elix. Paregoric.</i>	<i>3j.</i>
			<i>vel Tinct. Opii ammon.</i>	
			<i>Trochisci Bechici</i>	<i>3 vel 4</i>
				<i>indies.</i>
			<i>vel Troch. Glycir. cum Op.</i>	
			<i>Balsam. Anodyn.</i>	
			<i>vel Linim. opiatum.</i>	

<i>Simple.</i>	<i>Parts used.</i>	<i>Dose.</i>	<i>Compound and Chemical.</i>	<i>Dose.</i>
<i>Papaver.</i>	Head.		Syrup. Diacodion.	3j. to 3j.
			vel Syrup. papav. albi.	
Poppy.				
<i>Pimenta.</i>	Berry.		Aq. Piment.	3i. to iv.
Jamaica Pepper.		gr. ij. to iv.	spirit.	3j. to 3j.
			vel Sp. Pimentæ.	
<i>Quassia.</i>	Wood, bark, & root.	gr. x. to 3j.		
<i>Quercus.</i>	Bark.			
Oak.		3ij. to 3j.		
<i>Quercus Marina.</i>			Æthiops Vegetabilis.	3j.
Sea Wreck.				to 3ij.
<i>Rheum.</i>	Root.		Pil. stomach.	3fl.
			vel Pil. Rhei comp.	
			Infus. Rhei.	3ij. to iv.
Rhubarb.	3j. to 3j.		Tinct. Rhei.	3ij. to 3fl.
			Vin. Rhei. dulc.	3j.
			amar.	3j.
			Elix. Saccr.	3j.
			vel Tinct. Rb. cum Aloe.	
<i>Ricini Ol.</i>	Seed.			
Castor Oil.		3ij. to 3fl.		
<i>Rosæ pallidæ.</i>	Petal.		Aq. Rosar.	3ij. to iv.
Pale Roses.			Syrup. Rosar.	3j.
<i>Rosæ rubræ.</i>	Petal.		Conserv. Rosar.	3fl.
			Tinct. Rosar.	3j. sæpe.
			vel Infus. Rosar.	
Red Roses.		gr. v. to 3fl.	Syrup. Rosar.	3j.
<i>Rosmarinus.</i>	Top & flower.		Ol. Rosmar.	gutt. iij.
			Aq. Sp. Rosmar.	3j. to 3j.
			vel Sp. Rosmarin.	
Rosemary.			Aq. Regin. Hung.	idem.
			Acet. aromat.	3j. to ij.
<i>Rubia.</i>	Root.			
Madder.		3fl. to j.		

Si

Ruta.
Rue.Sabina.
Savine.

Sal Am

Ammon

Sal mar

Sea Salt.

Sal cath

Bitter C

Sapo alb

Castile S

Sarsapar

Sassafras

Scammon

Scammon

Seilla.

Squill.

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Simple.	Parts used.	Dose.	Compound and Chemical.	Dose.
Ruta.	Herb.	℥ss. to 3j.	Ol. Rutæ.	gutt. iij.
Rue.			Infus. Rutæ. (3j. to ℥bj.)	3ij.
Sabina.	Leaf.	3℥. to j.	Exir. Sab.	gr. v. to ℥ss.
Savine.			Decoct. Sabin. (3j. to ℥iij.)	3ij. to iv.
Sal Ammoniacum.			Sal Ammon. vol. gr. v. to ℥j. vel Ammon. præparata.	
Ammoniac Salt.		3℥. to j.	Sp. Sal Am. gtt. xv. to 3j. vel Aq. Ammoniacæ. Sp. Sal Am. cum Calce. vel Aq. Am. Caustic. Sp. Sal Am. vin. gtt. x. to 3j. vel Sp. Ammoniacæ Sp. S. lin. arom. gtt. x. to xl. ve. Sp. Am. aromat. Sp. volat. fœtid. gtt. x. to xxx. vel Sp. Am. fœtid. Sp. Mindereri. 3ij. to 3j. vel Aq. Am. acetat. Sp. Sal marin. gutt. v. vel Soda muriata.	
Sal marin. Hif.				
Sea Salt.		3j.		
Sal cathart. amar. vel Magnesia vitriolata.				
Bitter Cathartic Salt.		3ij. to 3℥.		
Sapo alb. Hispan.			Pil. Sapo.	gr. v. to ℥j.
Castile Soap.		℥j. to 3ij.	Linim. saponac.	
Sarsaparilla.	Root.	3j. to 3℥.	Decoct. Sarsæ. (3j. to ℥bj.)	℥ij. indies.
Sassafras.	Wood, root, & bark.	3ij.	Decoct. Lignor.	idem.
Scammonium.			Pulv. Scam. c.	℥j. to ij.
Scammony.		gr. iij. to xij.		
Scilla.	Root.		Pulv. Siccat. Pil. Scillit.	gr. i. to iij. gr. xv.
Squill.		gr. ij. to vi.	Acet. Scillit. Oxymel Scillit. Syrup. Scillit. Vin. Scillit. (rad. 3℥. ad. vin. ℥ij.) 3℥. pro dose.	3j. to 3℥. 3℥. to 3ij. 3j. to 3j.

Simple.	Parts used.	Dose.	Compound and Chemical.	Dose.
<i>Scordium.</i>				
Water Germander.		gr. v. to ʒj.		
<i>Seneka.</i>	Root.		Decoct. Senekæ.	ʒij. to iv.
Senega.		ʒj. to iij.	(ʒj. to ʒbj.)	
<i>Senna.</i>	Leaf.		Elect. Lenitiv.	ʒij. to ʒff.
		ʒj. to ʒff.	vel <i>Electuar Sennæ.</i>	
			Elix. salut.	ʒij.
			vel <i>Tinct. Sennæ comp.</i>	
<i>Serpentaria.</i>	Root.		Decoct. Serpent.	ʒj. sape.
			(rad. ʒij. to ʒvi.)	
Snake-root.		ʒj. to ʒff.	Tinct. Serpent.	ʒff. to ij.
<i>Spermaceti,</i> vel <i>Sesum Ceti.</i>		ʒj. to ʒj.		
<i>Sinapi album.</i>	Seeds.			
White Mustard.		ʒj.		
<i>Spongia.</i>			Spongia usta.	ʒj. to ʒj.
Sponge.				
<i>Stannum.</i>	Filings and powder.	ʒff. to ʒj.		
Tin.				
<i>Succinum.</i>			Ol. Succini.	gtt. x. to xxv.
Amber.		gr. viij. to ʒff.	Sal Succini.	gr. iv. to ʒj.
<i>Sulphuris Flores.</i>			Ung. antipforic.	
			vel <i>Ung. Sulphuris.</i>	
Flowers of Sulphur.		ʒij. to ʒff.	Balsam sulph.	gtt. xv. to xxx.
<i>Tamarindus.</i>	Fruit.		Infus. cum Senna.	ʒij. to iv.
Tamarind.		ʒij.		
<i>Tartari Chrysalis.</i>			Sal Tartar.	gr. iij. to xv.
Chrystals of Tartar.		ʒv. to vi.	Lixiv. Tartar.	gtt. xv. to ʒj.
<i>Terebinthina Veneta.</i>			Ol. Terebinth.	gutt. v.
Venice Turpentine.		ʒff. to ʒff.	Sp. Terebinth.	gtt. x. to xx.
<i>Tutia.</i>				
Tutty.				
<i>Valeriana sylvest.</i>	Root.		Infus. Valerian.	ad libit.
			(ʒj. to ʒbj.)	
Wild Valerian.		ʒff. to ʒff.	Tinct. Val. volat.	gtt. xv. to xl.
			vel <i>Tinct. Valer. Em.</i>	
<i>Veratrum.</i>	Root.		Tinct. Veratri.	ʒff.
White Hellebore.		gr. v. to ʒff.	Decoct. Verat.	ʒj. sape.
			(ʒj. ad ʒbj.)	

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<i>Simple.</i>	<i>Parts used.</i>	<i>Dose.</i>	<i>Compound and Chemical. Dose.</i>
<i>Viola.</i>	Fresh.		Infus. Violar. ʒij. to viij.
<i>Violet.</i>	flower.		(ʒj. to ʒbj.)
			Syrup. Violar. ʒj.
<i>Ulmus.</i>	Inner		Decoct. Ulmi. ʒbj. indic.
<i>Elm.</i>	bark.		(ʒij. to ʒbj.)
<i>Uva Urſi.</i>	Leaf.		Infus. Uvæ Urſi. ʒj. to viij.
<i>Bear's Wortle- berry.</i>		ʒj. to ʒiij.	(ʒij. to ʒbj.)
<i>Zincum.</i>			Ung. Zinci.
			Flor. Zinci. gr. ij. to ʒjss.
			vel Zincum uſum.
<i>Zinc.</i>			Aq. vitriolica.
			vel Aq. Zinci. vitriolat.
			Vitriolum album. ʒjss. to ij.
			vel Zinc. vitriolat.
<i>Zinziber.</i>	Root.		Infus. Zinziber. ʒij. to iv.
			(ʒij. to ʒbj.)
<i>Ginger.</i>		gr. v. to x.	Syrup. Zinziber. ʒj.

T A B L E

Shewing the Quantity of the Principal or Active INGREDIENT
in certain COMPOUND MEDICINES.

OPIUM.

	now	contains
L. Laud.	(<i>Tinct. Opii.</i>)	in each ounce ℥ij. of Opium.
Paregor. Elix.	(<i>Tinct. Opii-am.</i>)	ditto gr.viii. of Opium.
Doxer's Powd.	(<i>Pulv. Ipec. comp.</i>)	Dram gr. vj. of Opium.
Thebaic Elest.	(<i>Elest. Opiat.</i>)	ditto gr. j. of Opium.
Japon. Elest.	(<i>Elest. Catech.</i>)	Ounce gr. ij. fl. of Opium.
Pacific Pills.	(<i>Pil. Opii.</i>)	Dram gr. vj. of Opium.
Opium Troch.	(<i>Troch. Glyc. cum Op.</i>)	ditto gr. j. of Opium.
Anod. Balsam.	(<i>Linim. Opiat.</i>)	Ounce ℥j. of Opium.

MERCURY.

	now	contains
Pil. Merc.	(<i>Pil. Hydrar.</i>)	in each Dram gr. iv. of ℥.
Pil. Plum.	(<i>Pil. Calom. comp.</i>)	ditto gr. xxii. of ℥.
Ung. Merc.	(<i>Ung. Hydrar.</i>)	ditto gr. xij. of ℥.
Ung. nitrat.	(<i>Ung. Citrin.</i>)	ditto gr. iv. of ℥. and gr. vii. of acid.
Ung. nitrat. mit.	(<i>Ung. citr. mit.</i>)	ditto gr. ij. of ℥. and gr. iv. of acid.
Emplast. Merc.	(<i>Emp. Hydrar.</i>)	ditto gr. xvi. of ℥.

ANTIMONY.

	now	contains
Tartar emetic Wine.	(<i>Vin. Antimon. Tart.</i>)	in each Ounce gr. ij. of Tartar.

SCAMMONY.

	now	contains
Comp. Powder of Scammony.	(<i>Pulv. Scam. comp.</i>)	in each gr. vij. gr. iv. of Scam.

ALOES.

	now	contains
Colocynth Pills.	(<i>Pil. Aloes cum Colocynth.</i>)	in each Dram gr. xvj. of Aloes.

JALAP.

	now	contains
Comp. Powder of Jalap.	(<i>Pulv. Jalap comp.</i>)	in each Dram ℥j. of Jalap.

PART II.

CLASSIFICATION

OF THE
PRINCIPAL ARTICLES OF THE MATERIA MEDICA,
(ENUMERATED IN PART FIRST.)
ACCORDING TO THEIR MEDICAL QUALITIES.

CLASS I.

EMETICS.

EMETICA.

Bitters in an increased dose	<i>Amara fortia</i>
Chamomile, Carduus, &c.	
Ipecacuan	<i>Ipecacuban</i>
Wine of ditto	<i>Vin. ejusdem</i>
Antimonial Wine	<i>Vinum antimoniale</i>
Tartar emetic	<i>Tartarus emeticus</i>
Wine of ditto.	<i>Vin. e Tart. emetic.</i>

CLASS II.

PECTORALS.

PECTORALIA.

I. ATTENUANTS, *as*,

I. ATTENUANTA, *ut*,

Squills (fresh and dried)	<i>Scilla</i>
Vinegar of ditto	<i>Acetum scilliticum</i>
Oxymel of ditto	<i>Oxymel scilliticum</i>

Syrup of ditto
 Pills of ditto
 Decoction of Liquorice
 Extract of Liquorice
 Benjamin
 Flowers of ditto
 Tincture of ditto
 Gum Ammoniac
 Flowers of Sulphur
 Balsam of ditto

Syrup. scilliticus
Pill. scillit.
Infus. Glycirrhizæ
Extr. ejusdem
Benzonium
Flores Benzoini
Tinct. ejusdem
Animoniacum Gum
Flores Sulphuris
Balsam ejusdem.

2. INCRASSANTS, as,-

Marshmallow
 Decoction of ditto
 Syrup of ditto
 Gum Arabic
 Mucilage of ditto
 Emulsion of ditto
 Arabic Troches
 Lin seed Tea
 Spermaceti
 Expr. & Oils, as,
 Oil of Sweet Almonds
 Opium

2. INCRASSANTIA.

Althæa
Decoct. ejusdem
Syrup ejusdem
G. Arabicum
Mucilago ejusdem
Emulso ejusdem
Trochisci Arabici
Infus. Sem. Lini.
Spermaceti vel serum. ceti
Olea expressa, ut,
Ol. Amygdal. dulcium
Opium.

CLASS III.

CATHARTICS.

1. LAXATIVES.

Acid Fruits, as,
 Tamarinds
 Cassia of the Cane
 Electuary of ditto
 Manna
 Manna Whey
 Syrup of Pale Roses
 Ditto of Violets
 Soaps

CATHARTICA.

1. LAXANTIA.

Fruetus acidi, ut,
Tamarandi
Cassia Fistularis
Elect. Diacassia
Manna
Serum Mannæ
Syrup. Rosar. Damascens.
Syrup Violarum
Sapo

CLASSIFICATION.

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Soap Pills
 Cream of Tartar
 Magnesia
 Castor Oil
 Flowers of Sulphur

Pil. Saponac.
Crem. Tartari
Magnesia alba
Ol. Ricini
Flores Sulphuris.

2. PURGATIVES, *as*,

Aloes
 Aloetic Pills
 Rufus' Pills
 Aloetic Wine
 Rhubarb
 Stomachic Pills
 Tincture of Rhubarb
 Infusion of ditto
 Wine of ditto
 Bitter Tincture of ditto

 Sweet Tincture of ditto
 Sacred Elixir

 Senna
 Infusion of Tamarinds with
 Senna
 Lenitive Electuary
 Elixir of Health
 Jalap
 Extract of ditto
 Compound powder of ditto
 Jalap Pills
 Tincture of Jalap
 Syrup of Buckthorn
 Bitter Cathartic Salt
 Glauber's Salt
 Solubile Tartar

 Vitriolated Tartar

 Polychrest Salt
 Rochelle Salt

2. PURGANTIA, *ut*,

Aloe
Pil. aloetic vel ex Aloe
Pil. Rufi vel Aloes cum Myrrha
Vin. aloetic
Rhæum
Pil. stomachic.
Tinct. Rhæi
Infusio ejusdem
Vin. ejusdem
Tinct. Rhæi amar. vel T.
 Rhubarb. C.
Tinct. Rhæi dulcis
Elixir sacrum vel ex Aloet.
 Rheo
Senna
Infus. Tamarind. cum Senna

Electuar lenitiv. vel è Senna.
Elix. salut. vel Tinct. Senna C.
Jalapium
Extr. ejusdem
Pulv. ejusdem comp.
Pil. è Jalap.
Tinct. Jalap.
Syrup. de Rhamno
Sal Cathart. amar.
Sal Glauberi vel Soda Vitriol.
Tartar solubile vel Kali Tar-
 tarisat.
Tartar vitriolatum vel Kali
 Vitriolat.
Sal Polychrest. Idem
Sal Rochelle vel Soda Tartariz.

CLASSIFICATION.

CLASS IV.

EMMAGOGUES.

Rue and other Foetids,
 whether Bitters or Gums,
 Savine
 Decoction of ditto
 Madder
 Infusion of ditto
 Opium
 Castor
 Tinctures of ditto, simple
 and compound
 Mercury
 Iron
 Medicines that act by irrita-
 tion on contiguous parts

MENAGOGA.

*Ruta et alia Foetida, sive Ama-
 ra sive Gumm.*
Sabina
Decoct. ejusdem
Rubia
Infus. ejusdem
Opium
Castoreum
*Tinct. Castor, simplex et com-
 posita*
Hydrargyrus
Ferrum
*Medicinae partes vicinas irri-
 tantes.*

CLASS V.

ABSORBENTS.

Crab's Eyes
 Crab's Claws
 Prepared Chalk
 Coral
 Pearls
 Magnesia
 Calcined Hartshorn
 Quick lime
 All Alkalis in a diluted state

ABSORBENTIA.

Oculi Cancrorum
Chelæ eorundem
Creta preparata
Corrallium
Margaritæ
Magnesia
Cornu Cervi calcinat.
Calx viva
Alkalina mitia.

CLASS VI.

DIURETICS.

Juniper
 Oil of ditto

DIURETICA.

Juniperus
Ol. ejusdem

CLASSIFICATION.

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Spirit of ditto	<i>Aq. composita ejusdem</i>
Seneka	<i>Seneka</i>
Decoction of ditto	<i>Decoct. ejusdem</i>
Nitre	<i>Nitrum vel Kali Nitrat.</i>
Salt of Tartar	<i>Sal Tartar. vel Aq. Kali</i>
Cream of ditto	<i>Cremor Tartar.</i>
Ammoniac Salt	<i>Sal Ammoniac.</i>
Syrup of Meadow Saffron	<i>Colchic. Syrup.</i>
Acids	<i>Acida</i>
Opium	<i>Opium.</i>

CLASS VII.

DIAPHORETICS.

DIAPHORETICA.

Counter-poison	<i>Contrayerva</i>
Compound Powd. of ditto	<i>Pulv. contrayer. comp.</i>
Guaiac	<i>Guaiacum</i>
Decoction of the Woods	<i>Decoct. Lignor</i>
Sarsaparilla	<i>Sarsaparilla</i>
Decoction of ditto	<i>Decoct. ejusdem</i>
Antimony	<i>Antimonium.</i>

CLASS VIII.

SUDORIFICS.

SUDORIFICA.

Opium	<i>Opium</i>
Camphire	<i>Camphora</i>
Vinegar	<i>Acetum</i>
Volatile Alkali	<i>Alkali volatile</i>
Musk	<i>Moschus</i>
Snake root	<i>Serpentaria</i>
Tincture of ditto	<i>Tinct. ejusdem</i>
Neutral Salts, as,	<i>Salesmedii, ut,</i>
Mindererus Spirit, &c.	<i>Sp. Mindereri, vel Aq. Ammon. Acetat. &c.</i>

CLASS IX.

CORROBORANTS.

ROBORANTIA.

1. ASTRINGENTS, *as*,1. ASTRINGENTIA, *ut*,

Red Roses
Oak Bark
Logwood
Galls
Japan Earth
Gum Kino
Alum
Armenian and other Bolar
Earths
Preparations of Iron
Ditto of Copper
Ditto of Lead
Ditto of Zinc

Rosa rubra
Cort. Querci
Lignum Campechense
Gallæ
Catechu
Gum Kino
Alumen
Bolus Armena, &c.

Ferri præparat.
Cupri eadem
Saturni eadem
Zinci eadem.

2. TONICS, *as*,2. TONICA, *ut*,

Gentian
Lesser Centaury
Quassia
Simarouba
Decoction of ditto
Chamomile
Wormwood
Tincture of ditto
Leopard's Bane
Decoction of ditto
Peruvian Bark
Angustura Bark

Gentiana
Centaurium minus
Quassia
Simarouba
Decoct. ejusdem
Chamæmelum
Abſinthium
Tinct. ejusdem
Arnica
Decoct. ejusdem
Cortex Peruvianus
— Angustur.

CLASS X:

STIMULANTS.

STIMULANTIA.

1. AROMATICS, *as*,

1. AROMATICA, *ut*,

Peppermint
Spear-mint
Lavender
Lesser Cardamon
Rosemary
Cinnamon
Cassia
Canella alba
Cascarilla
Wild Valerian
Orange Bark
Sweet scented Flag

Mentha Piperitidis
—— *Sativa*
Lavendula
Cardamon. minus
Rosmarinus
Cinnamomum
Cassia
Canella alba
Cascarilla
Valeriana sylvestris
Cortex aurant.
Acorus.

2. PUNGENTS, *as*,

1. PUNGENTIA, *ut*,

Mustard
Nutmeg
Clove
Mace
Ginger
Alcohol

Sinopi
Myristica
Caryophylla aromatica
Macis
Zinziber
Alcohol.

3. BALSAMICS, *as*,

3. BALSAMICA, *ut*,

Turpentine
Canada Balsam
Capivi Balsam
Peruvian ditto
Balsam of Tolu
Myrrh
Storax
Tar

Terebinthina
Balsam Canadense
—— *Copaiba*
—— *Peruvian.*
—— *Tolctan.*
Myrrha
Storax
Petreolum.

CLASSIFICATION.

CLASS XI.

DEOBSTRUENTS.

DEOBSTRUENTIA.

Borax
Madder
Soap
Mercury
Mezereon
Antimony

Borax
Rubia
Sapo
Mercurius vel Hydrar.
Mezereum
Antimonium.

CLASS XII.

SEDATIVES.

SEDANTIA.

Acids
Nitre
Opium
Hemlock
Deadly Night-shade
Henbane
Camphire

Acida
Nitrum vel Kali Nitrat.
Opium
Cicuta
Belladonna
Hyosciamus
Camphora.

CLASS XIII.

ANTISPASMODICS.

ANTISPASMODICA.

Amber
Asa foetida
Galbanum
Woodfoet
Æther
Castor
Musk
Volatile alkaline Salts

Succinum
Asa foetida
Galbanum
Fuligo
Æther
Castoreum
Moschus
Sal. alkalina volatil.

CLASSIFICATION.

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CLASS XIV.

CARMINATIVES.

CARMINATIVA.

Coriander	<i>Coriandrum</i>
Dill	<i>Anethum</i>
Sweet Fennel	<i>Foeniculum dulce</i>
Caraway	<i>Carvi</i>
Anise	<i>Anisum</i>
Lesser Cardamom	<i>Cardamomum minus.</i>

CLASS XV.

EMOLLIENTS.

EMOLLIENTIA.

Althea	<i>Althea</i>
Lintseed	<i>Lini sem.</i>
White Lily	<i>Lilium album</i>
Express Oils	<i>Olea expressa</i>
Gum Arabic	<i>Gum. Arabicum</i>
Gum Tragacanth	<i>— Tragacanth.</i>
Starch	<i>Amylum</i>
Spermaceti	<i>Spermaceti</i>
Axunge	<i>Axungia vel adep. suilla.</i>

CLASS XVI.

LITHONTHRIPTICS.

LITHONTRIPTICA.

Alkali, both mild and caustic	<i>Alkali caustic. et mite, vel Aqua Kali pur. et Aq. Kali</i>
Soap	<i>Sapo</i>
Lime-water	<i>Aqua Calcis</i>
Alkaline aerated Water	<i>Aqua alkal. aerat.</i>
Wild Carrot	<i>Daucus sylvestris</i>
Bear's Wortleberry	<i>Uva Ursi</i>
Diuretics	<i>Diuretica.</i>

CLASS XVII.

REPELLENTS.

REPELLENTIA.

1. DISCUTIENTS, *as*,1. DISCUTIENTIA, *ut*,

Calamy

Lapis Calaminaris

Zinc

Zincum

Tutty

Tutia

Lead

Saturnum

Mindererus Spirit

*Sp. Mindereri vel Aq. Am-
mon Acetat.*

Vinegar

*Acetum.*2. COSMETICS, *as*,COSMETICA, *ut*,

Balsam of Mecca

Balsam Meccæ

Issues

Fonticuli.

EXTEMPORANEOUS PRESCRIPTION;

OR,

THE PRINCIPAL FORMS

EMPLOYED IN

THE CURE OF THE PRECEDING DISEASES.

INTRODUCTION.

Conception favoured by attention to the state of constitution, by the regulation of the menstrual discharge, and by the circumstances taking place in the act of coition, detailed in p. 38 (1 and 2).

When relaxation of the constitution prevails to a morbid degree, *tonics* particularly indicated, as in vol. I. p. 312. Where, on the contrary, rigidity prevails, this is to be obviated by change of climate, the use of the warm bath, &c. The regulation of the menstrual discharge is much connected with the state of constitution. Where relaxation however prevails, one symptom often occurs highly unfavourable to conception, this is the *fluor albus*, or *whites*, and it is to be removed by the means pointed out in vol. I. p. 297; and particularly by cold bathing.

BOOK I.

PREGNANCY.

Sympathetic Diseases.

Dyspepsia.

First stage treated by blood-letting, where evidently plethoric. The use of opiates, as in vol. I. p. 282. Or its injection; as,

R. Infus. Lini ℥viii.

L. L. gutt. lx. m. ft. Ennema.

R̄ Ol. Oliæ ʒv.
Tinct. Opii gutt. lx. m. fiat. Ennema.

Or by an external application ; as,

R̄ Emplast. Laddani ʒj.
G. Opii pulverifat. ʒj.
Liquesf. Emplast. dein adde Opii Pulv.

Second stage obviated by the common dyspeptic remedies, and neutral salts in the act of effervescence ; as,

R̄ Sal Tartar ʒj.
Aq. font. ʒviij. M.

R̄ Spt. Vitriol. ten.
Aq. font. ʒviij. M.

A table-spoonful of each mixture to be mixt, and taken in the act of effervescence.

Bitters, as in vol. I. p. 311 and 312.
Absorbents ; as,

R̄ Magnes. alb. ʒiij.
Pulv. Rhæi ʒij.
Aq. Cinnam. ʒv.
Aq. font. ʒj. M. fr. M.

Two table-spoonfulls, a dose occasionally.

The heart-burn tablet, the best remedy being a mixture of absorbents and aromatics, as prepared and sold by BURT, apothecary in Edinburgh.

Malacia, or Lapping,

Being an affection of mind, is to be treated by change of scene and amusement, so as to withdraw the mind from its attention to the particular infixed object which forms the disease.

Cardialgia, or Heartburn.

Palliated by the free use of absorbents, as in dyspepsia.

Hysteria.

Removed by the antispasmodics enumerated vol. I. p. 304.

Plethoric Diseases.

Counteracting general state at this period, either by venesection, if plethora strongly marked; or, what is now more common, by attention to the state of the primæ viæ.

Affection of Breasts.

Local applications consist in allowing a freedom of expansion; and for that purpose employing warmth and emollients to admit relaxation.

R. Ol. Palmæ ʒij.

A little to be rubbed warm on the part, and the breast afterwards covered with fur or flannel.

Retroverted Uterus.

The cure to be attempted.

1. By removal of pressure on the organ, by the use of the catheter, and clearing the intestines by injection.

In introducing the catheter here, its concave part must be turned downwards, the reverse of what is usual in other cases; and if the female one is too short, the male one is to be preferred: the point of its curve in the introduction being also directed downwards.

2. Subduing inflammation and pain, by venesection, if necessary, fomentations and opiates; and,

3. Replacing the retroverted part, and retaining it in this state.

By a proper position of the patient for the operation; and when the latter is performed, enjoining rest, and a horizontal posture, till the retrovertive period is over, or till the end of the fifth month.

In its ultimate state, both premature delivery and SIGAULT's operation equally ineffectual.

For a view of the disease, vide HUNTER's elegant plate.

Pleurisy, Cramp, &c.

Treated by venesection where indicated, the removal of accumulation in the intestines by laxatives, as in vol. I. p. 276, succeeded by the use of anodyne injections, as in p. 327, along with rest.

Convulsions.

Treated by removal of uterine irritation by venesection, and clearing the intestines, by sedatives applied to the part, or opiate injections; and,

By a counter stimulus applied to restore the energy of the brain; as, dashing the face with cold water, &c.

Palsy.

As arising chiefly from pressure, to be palliated till delivery less by general means than by rest, and the topical applications detailed in vol. I. p. 289.

MIXT DISEASES.

Obstipatio, or Costiveness.

To be avoided by a diet of easy assimilation, and the occasional use of laxatives, as in vol. I. p. 276.

Hæmorrhoids, or Piles.

Treated by the use of laxatives, as in the former disease, and a horizontal posture, while pain is alleviated by opiates, as in vol. I. p. 282. And inflammation abated by external sedative applications, as in vol. II. p. 448.

Edema, or Swelling of Legs.

Palliated till delivery by venesection, the use of laxatives, and a horizontal posture.

Varix.

Palliated in the same way; but if a rupture takes place, astringent applications are to be then applied, as in vol. II. p. 412.

Cramps of the Thighs and Legs.

Palliated, when severe, by opiates, as in vol. I. p. 282.

Cough and Dyspnoea.

Palliated by venesection, an occasional opiate, and attention to an erect posture.

Vomiting.

Relieved by attention to diet, or small quantities of light food at a time, and a particularly abstemious regimen. Sometimes changing position of the uterus may be attempted.

Incontinence and Suppression of Urine.

The former relieved by the proper application of compresses to receive the discharge; the latter removed by the regular and timely use of the catheter.

Accidental Diseases.

Dropfy.

ASCITES admits the operation of tapping being performed during pregnancy, if symptoms urgent, the puncture being made on the opposite side to that to which the uterus inclines. When no urgent symptoms occur, diuretics to be used till after delivery, as in vol. I. p. 352.

Fluor Albus

Is during pregnancy a local affection, and is to be treated less by general remedies than local applications, as in vol. I. p. 297.

Rupture.

To be chiefly palliated by attention to the intestines; but where alarming symptoms occur, premature delivery to be attempted.

Calculus.

To be palliated where occurring by anodynes, till after delivery.

Nephritic Complaints.

To be treated in the same way by anodynes and demulcents, vol. I. p. 284.

Icterus (Jaundice).

To be palliated till delivery by laxatives, and the remedies recommended in vol. I. p. 335.

Venereal Disease.

To be removed by a gentle course of mercury, exhibited in the mildest form, as in vol. I. p. 328.

BOOK II.

ABORTION.

Management to prevent it consists in,

1. Subduing the increased action of the uterus ; by,
Posture, as directed p. 87.
Opiate glysters.
2. Lessening determination to the organ ; by,
Bloodletting.
Cold.

Weakening the action of contiguous parts ; viz. of abdominal muscles ; by cold applications, as cloths dipt in oxycrate, and by their relaxation by posture, &c.

Preventing retention of urine.

Avoiding costiveness.

When abortion takes place, to procure its termination assistance may be given :

1. By irritation of the os tincæ with a finger, as directed p. 90.
2. By rupture of the ovum in the same way.

Where placenta retained, its expulsion promoted by occasional glysters, and the effects of its retention counteracted by frequent injections into the vagina, with the use of the bark and vitriolic acid, to obviate the putrescent tendency, as detailed vol. I. p. 318.

Future abortion to be prevented by obviating morbid relaxation by the use of tonics and cold bathing, as detailed vol. I. p. 311 ; by favouring uterine distension ; by confinement to bed till after the abortive period ; and by removing the constitutional taint, where arising from a venereal cause.

FLOODING.

Treated by the same preventative remedies as abortion.

FALSE CONCEPTION.

To be treated as abortion.

BOOK III.

PARTURITION.

The first step preparatory to every delivery is to know when called the state of the labour, by the touch; and then to adjust the bed and dress of the patient.

The touch, as formerly described, is the dexterous introduction of one or more fingers into the vagina, the woman being placed on her left side, the usual position of delivery, with her knees drawn up, and her breech towards the side of the bed. The great art on this introduction is to avoid giving pain, which chiefly takes place on the separation of the external labia. The finger should therefore be first moistened with axunge, and being placed on the symphysis, or joining of the pubes, when carried downwards, will naturally fall into the vagina; after which it is directed towards the sacrum, or rolled round the extremity of the vagina, so as to reach the orifice of the uterus.

By this examination, when the uterine dilatation is once determined as having begun, the particular form of the bed, most convenient for delivery, becomes next the object of attention. The bed of an in-lying woman, for its curtains, and other appendages, should consist of the lightest and thinnest materials, that the access of the air may be freely allowed; and part of them should be also kept constantly open for its admission. As the softness of the usual feather-bed renders it too easily discomposed, by the agitation and change of posture in the woman during her intervals of pain, a well stuffed mattress should be spread over it, covered with a piece of skin or oil-cloth. Over this last, a pair of sheets is then to be laid, in the ordinary way, and a second pair, made in the form of a roller, must be placed above them, in an opposite direction, with their ends tucked into the sides of the bed. An old blanket, covered by a sheet, is after-

wards to be placed, in a square form, directly under the woman's breech, to receive the waters on the rupture of the membranes, and the rest of the lochia. The remainder of the bed is to be adjusted in the common way, this supernumerary apparatus being mostly removed where wetted after delivery.

The making of the bed, if the pains continue strong, is immediately succeeded by the dress of the woman, which, from the degree of agitation during labour, the less cumbersome it is made appears most proper. It generally consists of an open half-shift, covered with a short bed gown, and a linen skirt, with a broad band, called the *safe-guard*, which serves in some measure, when fastened, to compress the abdominal muscles, and forms a proper pressure on the belly, when a little tightened, after delivery, at which time it is necessary to be changed.

These preparations of the bed and dress are the business of the nurse, and are generally over before an accoucheur is called, though it is necessary he should be acquainted with them.

CLASS I.—*Natural Labour.*

Duration seldom exceeding from six to eight hours.

Management consists in,

1. Assisting the natural efforts by preventing straining in the absence of pain, directing the proper position of the assistant parts, and encouraging the efforts of the patient in the time of pain.

2. Obviating morbid symptoms during the progress of labour; as,

Sickness, by washing out the stomach, or giving some slight aromatic infusion, as mint tea, &c.

Diarrhæa, by opiates in injection, if labour not much advanced.

Suppression of urine, by the use of the catheter; and, if head advanced, pushing the finger betwixt it and the pubes, to allow the catheter to pass.

Costiveness, by a laxative glyster.

Cramp, when in the abdomen, by opiates, and rupture of the membranes; when in the thigh, not to be alleviated until delivery.

Flooding, by cold applications; and, if very profuse, expediting delivery as soon as possible.

3. Preparing to receive the child.

As soon as the membranes break, the accoucheur should be at

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hand; but even then it is not necessary that he should interfere, unless he wishes to appear very attentive; when in the time of pain, he may support the perinæum with his hand, covered with a cloth held against it. When the head is expelled, he places a hand on each side of it, and waits for a pain, to give the shoulders their proper turn, and the body follows. The child is then to be placed on its side, beneath the cloths, which the accoucheur endeavours to support over it, and where he allows it to remain for a minute or two, till it cries, or shews certain signs of life and vigour. Its connection with the mother is then to be separated, by passing a ligature on the umbilical cord, at the distance of two inches from the navel. Another ligature should also be past on the side next the mother, and the division of the cord then made between them, which will prevent the blood in the placenta itself flowing into the bed on the division, and is the most cleanly method. The child is then given to an assistant; and, in the mean time, some cordial, as ægus, or cinnamon water, administered to the mother.

4. Removing the placenta.

The great flow of blood which follows the delivery of the child being over, and the uterus resuming its contraction, in from 15 to 20 minutes, by the occurrence of grinding uterine pains, the accoucheur twisting the umbilical cord round the fingers of one hand, while the other is higher placed within the vagina, by gently pulling, assists the expulsion of the placenta, which completes delivery. A roller is then applied round the abdomen of the woman. She is allowed for some time to remain in this situation, and having ascertained the state of her pulse, and the quantity of the discharge, she is then committed to the nurse, while the accoucheur retires into another apartment. When shifted and dressed, the accoucheur is informed that he may return, and give the necessary directions for the future management, before taking leave.

This is the regular process of 99 cases out of every 100.

Retention of the Placenta,

From various causes, requires special management.

From morbid adhesion,

To be removed by introduction of the hand, and separating it as directed p. 139.

From rupture of cord,

To be removed by the same means, and grasping it firm, without any separation.

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From irregular contraction or spasm,
To be removed in the same way, joined with the assistance of
an opiate.

CLASS II.—*Protracted Labour.*

Duration from twelve hours to four days.

Management consists in,

1. The art of persuasion, and soothing the patient, so as to
gain time.

2. Reserving her strength as much as possible, by suspending
exertion in the time of pain.

3. Obviating the several causes of delay; as,

Real weakness, by a proper use of cordials.

Early rupture of membranes, by opiates, and raising the head
to permit the flowing off of the remaining portion of the waters
that may be retained.

Over distension, by rupture of the membranes.

Fixt irritation, from suppression of urine, by the use of the
catheter, as directed p. 159. From spasm, by opiates.

Costiveness, by laxative injections.

Rigidity of the os tincæ by irritation with the finger, as direct-
ed p. 159, in the time of pain: contraction of the parts by vene-
section, and oily injections into the vagina.

General narrowness of pelvis, by suspending the exertion of
the pains, the exhibition of opiates, and every mean of gaining
time.

Face presentation, by altering the direction, as directed p. 162,
so as to bring it into the natural position.

CLASS III.—*Instrumental Labour.*

Marked by inefficacy of natural efforts, as displayed by the
state of the labour, and exhausted appearance of the patient.

For its success, all that is necessary is patience, perseverance, and
good hands.

Three circumstances are essential to be attended to in conduct-
ing every instrumental labour; the preparation for it, the appli-
cation of the instrument, and the extraction.

The preparation consists in,

1. Being satisfied that the state of the labour is proper for the
application of the particular instrument you are to employ; and,

without this, no entreaty should tempt you to take a rash step, from impatience on your own part, or that of the patient, which you may afterwards repent.

2. Removing every obstruction, by evacuation of the contiguous parts; viz. the bladder and rectum; and,
3. Adjusting the position most favourable for the delivery.

Lever.

The lever, or simplest instrument, is applied, the patient lying on her side.

The art in using it depends on its proper application, by getting high enough to fix a firm hold.

When the occiput is brought down, the labour proceeds readily.

Forceps.

The instrument most generally employed is the forceps; and, to ensure its success, three circumstances are to be attended to in using them:

1. That the state of the labour be proper for their application.
2. That the application be fitly made; and,
3. That the extraction be gradual.

With respect to the first, a proper forceps' case is, when the occiput presses against the perinæum, the ears inclined laterally, and the head fixed in the cavity of the pelvis.

In all other states of labour, their application is precarious, and should if possible be avoided.

With respect to the second circumstance, or their mode of application, their figure corresponds to the slope of the sides of the pelvis; they are therefore to be placed over the ears, by carrying them in their introduction as much as possible against the perinæum, which will secure a proper hold.

The left hand blade is to be first introduced, in order to make the locking upon the upper side, carrying it close to the surface of the foetal head, which will both prevent injury, and render the direction of the hand to the full height less necessary.

The first blade introduced is held in its place by a hand, till the other hand, introduced on the opposite side, confine it from slipping; and on this last hand, so introduced, the second blade is then directed. On withdrawing the hand, the blades are to be locked; and, if locking readily, leaving a space of an inch and a half between the blades, the hold is proper. If too close, a sufficient hold of the bony part is not included.

If not locking readily, the hold is improper.

When locked, a ligature is unnecessary, as occasioning too much compressing, which in pulling should even be moderated.

The efforts of pulling should be most violent, at first, until the head move.

When once moving, the certainty of succeeding is undoubted, and hurry is then to be avoided.

The direction of pulling should be first downwards and backwards; or, if not yielding from side to side, then more directly forwards; and, as the occiput is disengaged from the pubes, it should be upwards, to save as much as possible the external parts.

To take advantage of the natural efforts where they occur is a good general rule; but to wait for them, when the forceps are applied, no practitioner should think of.

The forceps are not merely, as Dr. DENMAN remarks, to supply the want of natural pains; their use proceeds farther, and is meant to give actual assistance where pains are of no avail.

The second forceps' case requires the blades to be applied from pubes to sacrum, the position of the woman in doing it being on her left side.

The extraction here, instead of pulling, begins by giving a quarter turn, so as to reduce the head to the natural presentation, when, the position of the woman being changed to her back, the extraction proceeds in the natural way.

The third forceps case differs nothing from the first, either in the application or extraction.

Face Cases.

When requiring the forceps, have their application regulated by the particular circumstances of the presentation, and the rules already detailed will apply.

Long Scissars and Crotchet.

The success here depends on a proper command of the presenting part, a full diminution of the head, and a gradual extraction.

The first is effected by a proper position of the patient, on her knees and elbows; and by the presenting part being wedged in the pelvis, or being kept firm by pressure on the abdomen.

The second requires a proper length of scissars, so as to perforate the bony texture of the cranium; and the perforation also to be made at more than one place.

The third is the most difficult; and, after the hold is secured, before proceeding to the extraction, the injured parts of the head should be so covered with the teguments, as to prevent wounding the passage in the progress of delivery.

Natal Case.

Marked by the cleft between the buttocks, and by the genitals.

Two methods of delivery practised.—Either allow it to advance naturally, or push up the presenting part, on once ascertaining it, and bring down the foot or feet, when it is reduced to the former case.

Transverse Case.

Distinguished by early rupture of the membranes; no part of the child felt; often the cord prolapsed.

The hand, in every variety of this case, to be introduced, and the feet brought down.

Brachial Case.

Known by the feel of the hand; the delivery always difficult, though depending, for the degree of it, on the time of the rupture of the membranes.

The treatment consists—

In preparing for turning; by ascertaining the exact situation of the feet, and relaxing the uterus by an opiate.

The hand then introduced as directed page 239.

When the hand cannot be introduced, the shoulder of the child to be raised by the operator's fore-finger and thumb, placed as a crutch under the axilla, so as to gain room for its passage.

Failing in these attempts, a spontaneous evolution of the child is to be allowed as the last resource.

CLASS V.—*Anomalous Labours.*

1. *Flooding.*

First step to distinguish the situation of the placenta, both by the symptoms and examination.

When properly attached, treatment conducted by enjoining a horizontal posture; by cold applications to the uterine region; by refrigerants in liberal doses, as in Volume First, page 295; and by

mild nourishments, in small quantities. When attended with pyrexia, bleeding sometimes admissible.

The flooding abating, motion to be avoided, as endangering a return.

When placenta improperly attached, known also by the symptoms and examination: delivery then the only certain relief.

To be attempted as soon as possible, or when marked by the appearance and decay of strength of the patient.

If pains attend, natural delivery is to be preferred, breaking the membranes as soon as within reach, and occasionally irritating the os tincae, in order to expedite the delivery.

When no pains occur, artificial delivery then unavoidable; performed as directed page 253, the success of which depends on its steps being slowly conducted. So soon as the membranes are broken, a proper abdominal compression is to be applied, in proportion to the relaxation of the uterus in the progress of delivery, and the strength of the patient supported by a proper use of cordials.

When floodings occur in the progress of labour, delivery is to be expedited, if necessary, by the forceps, as soon as the presentation is within reach.

Consequences of flooding to be obviated as directed in p. 255.

2. *Convulsions.*

Treatment to be palliated by venesection, opiates in glyster; and a powerful irritation to the face, by dashing it frequently, and, as it were, instantaneously, with cold water. As soon as the forceps can be applied, delivery to be completed.

3. *Prolapsed Funis.*

Treatment, introducing the hand; passing the cord beyond the presenting part, and retaining it there until presenting part sufficiently engaged to prevent its return. Neither turning nor forceps admissible in this case.

4. *Plurality of Children.*

Signs all uncertain until delivery of one, membranes then to be broken, and presentation of the head allowed to proceed; if not, the head to be turned, and feet brought into the passage. Both cords joined when extracting placenta, and, if not readily yielding, the hand to be introduced.

Whenever the hold slips, the extraction should immediately stop, and the hand be introduced, to ascertain the cause of it, and a new hold taken.

To avoid the use of the crotchet in future deliveries, three modes of prevention are recommended :

1. To prevent complete evolution, or growth of the child, by the treatment of the mother during pregnancy, consisting in an abstemious regimen and frequent small bleedings.
2. To produce premature labour, in the seventh or eighth month.
3. To enlarge the pelvis, by SIGAULT's operation. This operation is performed by cutting through the teguments and linea alba, at the upper and central part of the symphysis pubis, when, the finger being introduced as a director, the ligaments and cartilage are next divided, and the separation completed. The after-treatment consists in preventing or abating the effects of inflammation, which are here often considerable.

Dr. OSBORNE'S improved Crotchet Practice.

The success here lies in four circumstances ; viz-

1. The early diminution of the head.
2. The total removal of the cranial bones.
3. An intervening period between the diminution and extraction ; and,
4. An attention in the extraction to the dimensions of the pelvis.

Cæsarian Operation.

Previous treatment the same as for any important operation in surgery, particularly emptying the bladder and rectum.

Incision, either lateral or umbilical, carried slowly through the teguments and subjacent parts, till the peritonæum is laid in view.

Vessels then taken up by ligature. When done, a small hole to be made in the peritonæum, into which a finger introduced as a director, will guide the incision made with scissors to a sufficient length. A pressure then to be made on the abdomen by the hands of assistants, to circumscribe the situation of the uterus before the internal incision. Middle of the uterine surface that presents to be then opened, so as to introduce a finger, avoiding the situation of the placenta. Incision extended on the finger for a sufficient length, and the extraction of the child and secundines then made as quickly as possible, to prevent hæmorrhage.

If the child's head be locked in the brim of the pelvis, a finger introduced into the vagina, to raise it.

Operation finished, by removal of clotted blood effused.

After-treatment conducted—

1. By promoting adhesion of divided parts, by straps of adhesive plaister, or the dry suture (*vide* vol II. p. 23.), and the usual dressings.

2. By circumscribing incipient inflammation, which is best done by careful removal of every extraneous substance from the abdomen, before uniting the wound, and afterwards regularly removing such parts of the dressings as will allow a free discharge of any fluid collected.

CLASS IV.—*Manual Labours*

Require in their treatment a division into two stages,—the preparation and delivery.

The preparation consists in determining the position of the child, by examination external and internal, rendering the state of the uterus favourable to delivery by a large opiate, and directing the position of the patient, which is either the side, the knees and elbows, or, towards the termination of delivery, the breech.

The delivery consists in reducing every situation, by turning to a footling case, and extracting in that form.

Turning, performed by the introduction of the hand in the manner directed, page 230.

Footling Case.

Distinguished on rupture of the membranes, by the heel and want of the thumb.

Labour should proceed naturally till the head descends into the pelvis. Assistance then given by wrapping a cloth round the limbs, and pulling gently at each pain, and shifting the hold farther up as it advances, till the breast appear.

Back of the foetus must then be to the pubes; and if not, to be effected by giving it a turn.

When descending the length of the shoulders, the arms to be then brought down, as directed page 231.

When brought down, head to be then extracted, and the various difficulties opposing it obviated, as in page 232.

5. *Extra-Uterine Labour.*

No treatment admissible here, but trusting to nature; expelling the production, by the process of inflammation in her own way, except in abdominal cases, taken notice of under the head of Cæsarion operation, page 225.

BOOK IV.

Child-Bed.

The situation of the patient should be airy and free; her posture, with the head and shoulders raised; and every attention paid to preserve her quiet and unruffled.

Pain is to be obviated by the use of anodynes, which are variously combined, according to the usage of different places.

In England, they are combined in mixtures with *spermaceti* and *contrayerva*; in Ireland with *asafœtida*; and in France, with oily draughts.

The simplest forms, however, are best; as,

℞ Tinct. Opii gutt. xxx.
Aq. Cinn. f.
Syr. Simpl. ʒ ʒss. m. fiat. haust.

*To be repeated every night
while the pain continues.*

℞ Pil. Pacific.

Two at bed-time.

℞ Aq. distillar. ʒss.
Ol. Amygdal. dulc. ʒij.
Syr. Balsam. ʒj.
Elix. Paregoric ʒj. m. ft. haust.

℞ Spermaceti, ʒss.
Sacchar. alb. ʒj.
Mucilag. G. Arabic ʒj.
Tinct. Opii gutt. xxx. m. ft. haust.

Vide also vol. I. p. 283.

When watchfulness the only symptom, and opiates disagree, Castor will succeed; as,

R. Castor. Ruffic. recenter Pulver. ℥i. ad ℥ij.

The dose to repeated after an hour, till it succeed.

Where the after-pains assume the form of spasm, the opiate to be exhibited in glyster, either simply, or combined with asafoetida, as in page 329.

Fomentations also applied externally, as in vol. II. page 413.

Thirst is to be abated by the use of cooling drinks, viz. toast and water, Cow milk whey, gruel, &c.; or as in vol. I. page 275.

Costiveness is to be obviated by mild laxatives, as in vol. I. page 296; or, what is preferable, by an emollient glyster, every second day, as in vol. I. page 276.

Diseases of Child Bed.

Faintings.

Faintings of the mild species removed by proper abdominal pressure, a supine posture, and the use of gentle stimulants, as, steams of vinegar to the nose, or moistening it with lavender or Hungary water, giving a little negus or cinnamon water occasionally, with a free admission of cool air.

Faintings of the second species admit little relief, except warm applications, to restore the viral heat, in addition to the former treatment.

Hæmorrhage.

To be checked by a free application of cold; as cloths dipped in oxyrate, applied to the abdomen and back; cold water dashed on the abdomen, and injected with a bag and pipe into the uterus.

Raising the patient suddenly to the erect posture, so as to bring on fainting or delirium; giving large doses of opium; and failing by these means, irritation of the os tincæ with the finger, to excite the contraction of the organ.

Recovery generally takes place, if surviving six hours.

Partial Injuries.

Swelling of Parts removed by fomentations, as in vol. II. p. 413; by emollients, as in vol. II. p. 337; and the use of the catheter.

Laceration of the Bladder palliated by Saturnine washes, as in vol. II. p. 412; by pressure against the part; by a sponge pessary adapted to it; by the occasional introduction of a bougie into the urethra; and by the general means of invigorating the system in the use of tonics and cold bathing.

Incontinence of Urine palliated till the tone of the parts is repaired; by thick compresses applied, to absorb the moisture.

Rupture of the Uterus treated by immediate delivery, and afterwards obviating pain and inflammation.

Inflammation of the Uterus depends on the general means of abating inflammation, by the antiphlogistic course, as directed vol. I. p. 276; and by warm fomentations to the part, as in vol. II. p. 413.

If suppuration takes place, treatment proper as directed vol. II. p. 413, with the use of bark and opium internally, to hasten it.

Prolapsus of the Uterus, in its mild state, yields to a horizontal posture; styptic washes, as in vol. II. p. 449; and the use of general tonics, as the bark, steel, and cold bathing.

In the complete state, in addition to these means, it requires also a mechanical support, or the application of a pessary.

Pessaries are of various kinds; the simplest of them is the sponge, prepared in the following manner: let a piece of sponge be soaked in alum water, of a certain size, accommodated to that of the vagina, and let a thread be passed through it, so that it may be easily withdrawn. This sponge is to be introduced, covered loosely with a piece of linen, which will allow its expansion during the time it is retained astringent; injections are to be thrown up of alum water, or sugar of lead. After a few days, it is to be withdrawn, and a smaller sponge, according to the degree of contraction in the passage, introduced anew, and the same successive change of size is to take place, until it can be entirely laid aside. A compress and bandage will retain them in their place. But pessaries of a firmer substance are required, when the disease is of long standing; and they are of ivory, wood, steel, and sometimes of cork and sponge, covered with wax; but, from their brittleness, they do not answer well. The elastic resin has been also tried, but does not answer, from turning too soft in the vagina. The box wood or ivory are found to answer best: they are made with a ball and socket, when they are supported by strings tied round the waist and thighs; but their motion occasions their fretting the parts.

The form of a plain circular ring is, therefore, preferred: it should be covered with a piece of linen; and a bit of tape should be fastened to the edge, to facilitate its extraction. The great art in its introduction is to adapt the size to the state of the parts; for it should be so large as to be introduced with difficulty,

and occasion somewhat of a painful stretching, one edge being placed to the pubes, the other to the perinæum, until it pass between the ischia, by the projections of which it is supported: when it is turned for this purpose in the other direction. It should be withdrawn every eight or ten days, that no incrustations may take place, and then introduced anew.

Fevers.

Weed.

Ephemera, or weed, to be treated as directed in vol. I. p. 339, particularly in the use of mild diaphoretics.

Lactéal, or Milk Fever.

Besides the usual antiphlogistic means, detailed in vol. I. p. 276, requires particular attention to the local affection, or breasts, as directed vol. II. p. 130. 262. and also p. 431, and 445.

Miliary Fever.

To be treated in the mild species by the antiphlogistic course, as in vol. I. p. 276.

To be treated in the malignant species as a typhus, vol. I. page 301.

Puerperal Fever.

Treatment as directed vol. I. p. 310.